

CONFERENCE PROGRAM



CHI 2012
it's the experience!

The 30th ACM Conference on Human Factors In Computing Systems (CHI)

AUSTIN • TEXAS • USA
MAY 5-10, 2012

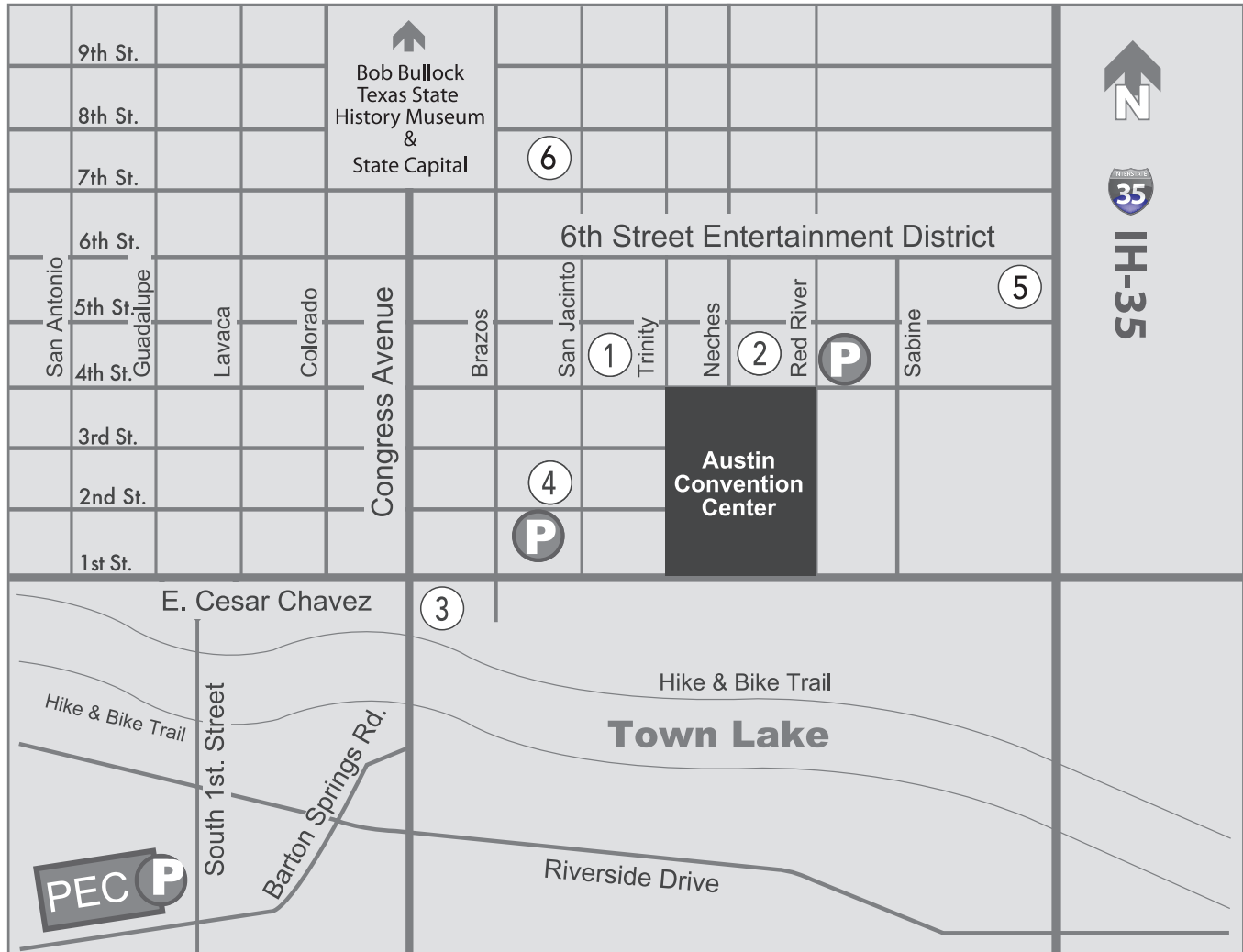


Association for
Computing Machinery

chi2012.acm.org



Austin Convention Center and Hotel Accommodations



Parking Facilities

- | | |
|--|--|
| <p>1 Courtyard by Marriott
300 East 4th St., Austin, TX</p> <p>Residence Inn Austin Downtown
300 East 4th St., Austin, TX</p> | <p>4 Hampton Inn & Suites Downtown
200 San Jacinto Blvd., Austin, TX</p> <p>5 Hilton Garden Inn Downtown
500 N IH-35, Austin, TX</p> |
| <p>2 Hilton Austin
500 E. Fourth St., Austin, TX</p> | <p>6 Omni Austin Hotel Downtown
700 San Jacinto at 8th St., Austin, TX</p> |
| <p>3 Radisson Hotel & Suites
Austin Town Lake
111 E. Cesar Chavez St., Austin, TX</p> | <p> The Bob Bullock
Texas State History Museum
1800 N. Congress St., Austin, TX</p> |

	Ballroom D	Ballroom E	Ballroom F	Ballroom G	12AB	16AB
08:30-11:00	CHI Welcome and Opening Plenary with Margaret Gould Stewart followed by CHI Madness (Ballroom D)					
Break (11:00-11:30) 4th Floor Foyer						
11:30-12:50	Invited Talk Richard Shusterman: Somaesthetics and its Implications for CHI	Technical Presentations Curves and Mirages: Gestures and Interaction with...	Technical Presentations Leveraging the Crowd	Technical Presentations Getting Around: Menus, Scrolling, and Advanced Navigation	Technical Presentations AI & Machine-Learning & Translation	Technical Presentations Touch in Context
Lunch Break (12:50-14:30)						
14:30-15:50	Award Talk Joy Mountford SIGCHI Lifetime Practice Award	Technical Presentations Brain and Body	Panel Women in UX Leadership in Business	Technical Presentations Empathy and Technology: Focus on the End User	alt.chi Reflections and Transgressions	Technical Presentations Text Visualization
Break (15:50-16:30) 4th Floor Foyer						
16:30-17:50	Invited Panel The Arts, HCI, and Innovation Policy Discourse	Technical Presentations Hot Moves: Shape-changing and Thermal Interfaces	Invited Panel Creating Great User Experience: Facing the Challenges Ahead	Technical Presentations Intimacy and Connection	alt.chi Physical Love	Technical Presentations Interacting With Robots & Agents
Conference Reception (18:00-20:00) Exhibit Hall 4, Level 1						

MONDAY NOTES:

	Ballroom D	Ballroom E	Ballroom F	Ballroom G	12AB	16AB
08:30-09:20	CHI Madness (Ballroom D)					
09:30-10:50	Special Event SIGCHI Town Hall meeting on Peer Reviewing at CHI	Technical Presentations I Am How I Touch: Authenticating Users	Panel Music Interaction Research - Let's Get the Band Back Together	Technical Presentations Visionary Models + Tools	Technical Presentations Pen + Touch	Technical Presentations Critical Perspectives on Design
Break (10:50-11:30) Poster Interactions focusing on featured posters of the day (Exhibit Hall 4, Level 1)						
11:30-12:50	Special Event CHI Video Program Premiere	Technical Presentations Kick it! Interfaces for Feet and Walking	Panel Tangible Interfaces for Children: Cognitive, Social, & Physical Benefits and Challenges	Technical Presentations Music Across CHI	Technical Presentations Tools and Stats in Evaluation Studies	Technical Presentations Personas and Design
Lunch Break (12:50-14:30)						
14:30-15:50	Special Event Student Games Competition	Technical Presentations Understanding Online Communication	Panel Hunting for Fail Whales: Lessons from Deviance and Failure in Social Computing	Technical Presentations Performative Emergency Simulation	Technical Presentations The Tools of the Trade	Technical Presentations Needle in the Haystack
Break (15:50-16:30) Highlight on Interactivity begins (Exhibit Hall 4, Level 1) – continues until 19:00						
16:30-19:00	Special Event Highlight on Interactivity Continued - (Exhibit Hall 4, Level 1)					
19:00-20:30	Video Encore (Ballroom D)					

TUESDAY NOTES:

	17AB	18AB	18CD	19AB	11A
08:30-11:00	CHI Welcome and Opening Plenary with Margaret Gould Stewart followed by CHI Madness (Ballroom D)				
Break (11:00-11:30) 4th Floor Foyer					
11:30-12:50	Technical Presentations Teaching with New Interfaces	Technical Presentations Game Experiences	Technical Presentations Eating + Cooking	Technical Presentations Spectators	Course 6 Introduction to Research and Design for Sustainability
Lunch Break (12:50-14:30)					
14:30-15:50	Technical Presentations Immateriality as a Design Feature	Technical Presentations Privacy + Self Disclosure	Technical Presentations Supporting Visually Impaired Users	Technical Presentations Workplace	Course 6 (continued)
Break (15:50-16:30) 4th Floor Foyer					
16:30-17:50	Technical Presentations Uses of Media & Creation of Web Experiences	Technical Presentations Tools for Video + Images	Technical Presentations Sustainability and Behavior Change	Technical Presentations HCI4D: Business	Invited SIG Designing for the Living Room TV Experience
Conference Reception (18:00-20:00) Exhibit Hall 4, Level 1					

MONDAY NOTES:

	17AB	18AB	18CD	19AB	11A
08:30-09:20	CHI Madness (Ballroom D)				
09:30-10:50	Technical Presentations Affective Presence	Technical Presentations Games: Community + Communication	Technical Presentations Healthcare + Technology: Putting Patients First	Technical Presentations It's a Big Web!	Course 15 User Experience Evaluation in Entertainment and Games
Break (10:50-11:30) Poster Interactions focusing on featured posters of the day (Exhibit Hall 4, Level 1)					
11:30-12:50	Technical Presentations Values in Research Practice	Technical Presentations Literacy on the Margin	Technical Presentations Participatory Design with Older People	Technical Presentations Space: The Interaction Frontier	Course 15 (continued)
Lunch Break (12:50-14:30)					
14:30-15:50	Technical Presentations Publics and Civic Virtues	Technical Presentations Promoting Educational Opportunity	Technical Presentations Interfaces for Health & Well Being	Technical Presentations Crowdsourcing and Peer Production I	Course 17 Practical Statistics for User Research Part II
Break (15:50-16:30) Highlight on Interactivity begins (Exhibit Hall 4, Level 1) – continues until 19:00					
16:30-17:50	Special Event Highlight on Interactivity Continued - (Exhibit Hall 4, Level 1)				
19:00-20:30	Video Encore (Ballroom D)				

TUESDAY NOTES:

	11B	13A	13B	14	15	Commons Exhibit Hall 4
08:30-11:00	CHI Welcome and Opening Plenary with Margaret Gould Stewart followed by CHI Madness					Exhibits Open 18:00-20:00
Break (11:00-11:30) 4th Floor Foyer						
11:30-12:50	Invited SIG (UX Community) Current Issues in Assessing and Improving Information...	Course 2 Evaluating Children's Interactive Products	SIG Management Community	Course 3 Global UX Strategies	Course 4 The Role of the UX Professional on an Agile Team	Conference Reception & Exhibits Grand Opening 18:00-20:00
Lunch Break (12:50-14:30)						
14:30-15:50	Invited SIG (Child Computer Interaction) Postcards and Conversations	Course 7 Assessing Usability Capability Using ISO Standards	Course 5 Art and HCI in Collaboration	Course 9 Practical Statistics for User Research Part I	Course 8 Evidenced-Based Social Design of Online Communities	Interactivity Permanent Collection 18:00-20:00
Break (15:50-16:30) 4th Floor Foyer						
16:30-17:50	SIG (Games and Entertainment) Shaping the Future	Course 7 (continued)	Course 10 (Part 1 of 2) Finding Your Way in Design Research	Course 9 (continued)	Course 8 (continued)	
Conference Reception (18:00-20:00) Exhibit Hall 4, Level 1						

MONDAY NOTES:

	11B	13A	13B	14	15	Commons Exhibit Hall 4
08:30-09:20	CHI Madness (Ballroom D)					Exhibits Open 10:50-18:00
09:30-10:50	Course 5 Art and HCI in Collaboration	Course 11 Agile UX	Course 12 Designing with and for Children in the 21st Century	Course 14 Inspiring Mobile Interaction Design	Course 13 Designing with the Mind in Mind	Posters (WIPs) Design User Experience 10:50-18:00
Break (10:50-11:30) Poster Interactions focusing on featured posters of the day (Exhibit Hall 4)						
11:30-12:50	Invited SIG (Digital Arts) Articulating Lines of Research in Digital Arts, HCI, and Interaction	Course 11 (continued)	Course 12 (continued)	Course 14 (continued)	Course 13 (continued)	Interact with Poster Authors 10:50-11:30
Lunch Break (12:50-14:30)						
14:30-15:50	Invited SIG (Sustainability) Inventory of Issues and Opportunities	Course 18 Social Interaction Design for Online Video and Television	Course 12 (continued)	Course 19 User Experience Evaluation Methods	Course 16 Innovating from Field Data	Interactivity Permanent Collection 10:50-19:00 Limited Time Collection 15:50-19:00 Job Fair 17:00-19:30
Break (15:50-16:30) Highlight on Interactivity begins (Exhibit Hall 4, Level 1) – continues until 19:00						
16:30-17:50	Special Event Highlight on Interactivity Continued - (Exhibit Hall 4, Level 1)					
19:00-20:30	Video Encore (Ballroom D)					

TUESDAY NOTES:

	Ballroom D	Ballroom E	Ballroom F	Ballroom G	12AB	16AB
WEDNESDAY	08:30-09:20 CHI Madness (Ballroom D)					
	09:30-10:50 Special Event Student Research Competition	Technical Presentations Outside the Box	Panel Indy R&D: Doing HCI Research off the Beaten Path	Technical Presentations Sensing + Sensible Interaction	Technical Presentations Pasts + Futures	Technical Presentations Visualization + Visual Analysis
	Break (10:50-11:30) Poster Interactions focusing on featured posters of the day (Exhibit Hall 4, Level 1)					
	11:30-12:50 Award Talk Baty Friedman SIGCHI Social Impact Award	Technical Presentations Sensory Interaction Modalities	Panel The Humanities and/in HCI	Technical Presentations Old Mouse, New Tricks: Desktop Interfaces	Technical Presentations Search Interfaces	Technical Presentations Beyond Paper
	Lunch Break and Interactivity Encore (12:50-14:30) Exhibit Hall 4, Level 1					
	14:30-15:50 Special Event Student Design Competition	Technical Presentations Dimensions of Sensory Interaction	Panel Occupy CHI! Engaging U.S. Policymakers	Technical Presentations Phone Fun: Extending Mobile Interaction	Technical Presentations Culture, Playfulness, and Creativity	Technical Presentations Usability Methods
	Break (15:50-16:30)					
16:30-17:50 Invited Panel Managing UX Teams: Insights from Executive Leaders	Technical Presentations Morphing & Tracking & Stacking: 3D Interaction	Technical Presentations Social Computing: Business & Beyond	Technical Presentations Programming, Performance, and Sense Making	Technical Presentations See Hear Speak: Redesigning I/O for Effectiveness	alt.chi Making Sense	

WEDNESDAY NOTES:

	Ballroom D	Ballroom E	Ballroom F	Ballroom G	12AB	16AB
THURSDAY	08:30-09:20 CHI Madness (Ballroom D)					
	09:30-10:50 Award Talk SIGCHI Lifetime Research Award Dan Olsen	Technical Presentations Touch Text Entry	Panel Material Interactions - From Atoms & Bits to Entangled Practices	Technical Presentations Programming and Debugging	alt.chi Home and Neighborhood	Technical Presentations Comfortable Aging
	Break (10:50-11:30) Poster Interactions focusing on featured posters of the day (Exhibit Hall 4, Level 1)					
	11:30-12:50 Invited Talk Stu Card: Interaction Science in the Age of Makers and Instructables	Technical Presentations Bigger is Better: Large and Multiple Display Environments	Panel Social Sustainability: An HCI Agenda	Technical Presentations What a Lovely Gesture	Technical Presentations Tweet, Tweet, Tweet!	Technical Presentations Better Together
	Lunch Break (12:50-14:30)					
	14:30-15:50 Technical Presentations Use the Force	Panel How-to-Guide: Collaborating with Executives in a Pro-Design World	Technical Presentations Human Performance Gives Us Fitts'	Technical Presentations Usability and User Research	Technical Presentations Usability and User Research	Technical Presentations Groups @ Work
	Break (15:50-16:30) Celebrate CHI's 30th Anniversary (4th Floor Foyer)					
16:30-17:50 CHI Closing Plenary with Hugh Herr (Ballroom D) Designing Intelligent Orthotics and Prosthetics						

THURSDAY NOTES:

	17AB	18AB	18CD	19AB	11A
WEDNESDAY	08:30-09:20 CHI Madness (Ballroom D)				
	09:30-10:50 Technical Presentations Mobile Computing and Interaction	Technical Presentations Future Design	alt.chi Games and Play	Technical Presentations Time + Task: Managing Work Life	Course 26 Interaction Design for Social Development
	Break (10:50-11:30) Poster Interactions focusing on featured posters of the day (Exhibit Hall 4, Level 1)				
	11:30-12:50 Technical Presentations Music	Technical Presentations ICT4D	Technical Presentations Movement-Based Gameplay	Technical Presentations Social Support and Collaboration	Course 26 (continued)
	Lunch Break and Interactivity Encore (12:50-14:30) Exhibit Hall 4, Level 1				
	14:30-15:50 Technical Presentations I Did That! Being in Control	Technical Presentations Teaching with Games	Technical Presentations Health + Design	Technical Presentations Check This Out: Recommender Systems	SIG End-User Programming
	Break (15:50-16:30)				
16:30-17:50 Technical Presentations Triple T: Touch, Tables, Tablets	Technical Presentations Defying Environmental Behavior Changes	Technical Presentations Learning with Children	Technical Presentations Design Theory & Practice	SIG HCI Research and Education in Arabic Universities	

WEDNESDAY NOTES:

	17AB	18AB	18CD	19AB	11A
THURSDAY	08:30-09:20 CHI Madness (Ballroom D)				
	09:30-10:50 Technical Presentations Interactions Beyond the Desktop	Technical Presentations Right Where I Am: UX in Complex Environments	Technical Presentations Health and Children	Technical Presentations Organizing the Recovery	SIG Changing Requirements to HCI Funding: A Global Perspective
	Break (10:50-11:30) Poster Interactions focusing on featured posters of the day (Exhibit Hall 4, Level 1)				
	11:30-12:50 Technical Presentations Me & My Mobile	Technical Presentations Understanding Gamers	alt.chi Design Matters	Technical Presentations Crowdsourcing and Peer Production II	Invited SIG Participation and HCI: Why Involve People in Design?
	Lunch Break (12:50-14:30)				
	14:30-15:50 Technical Presentations Do You See What Eye See	Technical Presentations Home and Family	Technical Presentations Designing for Learners' Complex Needs	Technical Presentations With a Little Help from My Friends	SIG Designing Wellness Interventions and Applications
	Break (15:50-16:30) Celebrate CHI's 30th Anniversary (4th Floor Foyer)				
16:30-17:50 CHI Closing Plenary with Hugh Herr (Ballroom D) Designing Intelligent Orthotics and Prosthetics					

THURSDAY NOTES:

	11B	13A	13B	14	15	Commons Exhibit Hall 4
WEDNESDAY	08:30-09:20 CHI Madness (Ballroom D)					Exhibits Open 10:50-17:00 Posters Doctoral Consortium, Student Design, Student Research, Workshops 10:50-17:00 Interact with Poster Authors 10:50-11:30 Interactivity Permanent Collection 10:50-19:00 Limited Time Collection 12:50-14:30 Joint Hospitality Reception Bob Bullock Texas State History Museum Busing available 18:30-20:30
	09:30-10:50 RepliCHI From a Panel to a New Submission Venue for Replication	Course 24 Choice and Decision Making for HCI	Course 22 Advanced Research & Design for Sustainability	Course 23 Agile UX Toolkit	Course 25 Designing What to Design	
	Break (10:50-11:30) Poster Interactions focusing on featured posters of the day (Exhibit Hall 4)					
	11:30-12:50 SIG Multitasking and Interruptions	Course 24 (continued)	Course 22 (continued)	Course 23 (continued)	Course 25 (continued)	
	Lunch Break and Interactivity Encore (12:50-14:30) Exhibit Hall 4, Level 1					
	14:30-15:50 SIG Reject Me: Peer Review and SIGCHI	Course 27 Card Sorting for Navigation Design	Course 30 Multimodal Detection of Affective States	Course 28 Empirical Research Methods for Human-Computer Interaction	Course 29 Hands-Free Interfaces	
	Break (15:50-16:30)					
16:30-17:50 Invited SIG (Engineering Community) The Role of Engineering Work in CHI	Course 27 (continued)	Course 30 (continued)	Course 28 (continued)	Course 31 Designing for "Cool"		

WEDNESDAY NOTES:

	11B	13A	13B	14	15	Commons Exhibit Hall 4
THURSDAY	08:30-09:20 CHI Madness (Ballroom D)					Exhibits Open 10:50-13:30 Closes at 13:30 Posters (WIPs) Child-Computer, Sustainability, Engineering, Games & Entertainment, Health, Other Topics 10:50-13:30 Interactivity Permanent Collection 10:50-11:30 Closes at 11:30 Interact with Poster Authors 10:50-11:30 Celebrate CHI's 30th Anniversary 4th Floor Foyer 15:50-16:30
	09:30-10:50 Invited SIG (Digital Art) Evaluation, Appreciation, Critique	Course 33 Cognitive Crash Dummies	Course 34 Designing for Persuasion	Course 35 From Discourse-based Models to UIs Automatically Optimized for Your Smartphone	Course 32 Agile User Experience and UCD	
	Break (10:50-11:30) Poster Interactions focusing on featured posters of the day (Exhibit Hall 4)					
	11:30-12:50 SIG Gaze Interaction in the Post-WIMP World	Course 33 (continued)	Course 36 Methodology for Evaluating Experience of Mobile Applications Used in Different Contexts of Daily Life	Course 35 (continued)	Course 32 (continued)	
	Lunch Break (12:50-14:30)					
	14:30-15:50 SIG Work Life Balance in HCI	SIG Animal-Computer Interaction SIG	Course 36 (continued)	Course 38 Selecting UCD Methods that Maximize Benefits and Minimize Project Risks	Course 37 Putting Conceptual Models to Work	
	Break (15:50-16:30) Celebrate CHI's 30th Anniversary (4th Floor Foyer)					
16:30-17:50 CHI Closing Plenary with Hugh Herr (Ballroom D) Designing Intelligent Orthotics and Prosthetics						

THURSDAY NOTES:



Welcome to CHI 2012!

After nearly two years of preparation, we are thrilled to welcome you to CHI 2012 in Austin, Texas. Austin is justifiably proud of being the Live Music Capital of the World (R), and it is home to a world-class university, innovative technology and design firms, superb restaurants, exciting culture and nightlife, and genuinely friendly people—what a perfect fit for our CHI conference. We encourage you to get out and explore the city.

But we also are working hard to lure you back indoors with a phenomenal technical program. At the core of the program are over a hundred technical sessions with research papers and notes, case studies, and other exciting presentations that bring you the best new work on human-computer interaction. We give thanks to our hundreds of review committee members and our more than one thousand reviewers—they invested thousands of hours to help make sure that we've picked the best content. All of the technical content can be found in the ACM Digital Library.

At the same time, we hope to lure you into our useful courses, engaging panels, and thoughtful invited talks. We're very excited to have Margaret Gould Stewart and Hugh Herr as our keynote speakers. In spanning from Margaret's talk on connecting the world through video to Hugh's talk on designing intelligent orthotics and prosthetics we span the scope of this conference—from social interaction with each other through computing to the very personal and intimate interaction of a human with computerized limbs or other assistive devices. We're also excited to have two special invited talks: Stu Card, SIGCHI's 2000 Lifetime Achievement Award winner, will talk about what interaction science means in today's environment; and Richard Shusterman will bridge HCI and the humanities as he introduces us to Somaesthetics and how it can improve our understanding and experience. We are also honored to have Dan Olsen, Joy Mountford, and Batya Friedman—SIGCHI's Lifetime Research, Lifetime Practice, and Social Impact awardees—each giving talks at CHI 2012. Each of the three of them has made an indelible impact on our field.

The theme of this year's CHI conference is "It's the Experience!" and from the beginning it has been our goal to ensure that CHI 2012 attendees don't only hear about HCI, but experience it with all of their senses. We are therefore delighted to have more than 60 interactivity demonstrations and installations—opportunities for you to see, feel, hear, and interact with exciting new technologies and also to reflect on technologies of the past, thanks to Roger Ibars' HWD collection—a

hands-on installation of historic hard-wired input devices. We'll be featuring the full set of interactivity on Tuesday afternoon and Wednesday lunchtime; selected installations will be available at other times—check the Interactivity tab for more details. Our video program will provide another way to experience innovative forms of HCI.

CHI 2012 has new depth in Computer Games (including a new student games competition), digital arts, and the humanities. We have an unusually rich collection of Digital Arts installations—we invite you to take some time to interact with the artists and learn about how art—like science, engineering, and design—has its own ways of posing and exploring challenging questions.

And there's so much more. We will also have over 250 posters representing exciting works-in-progress and much more. Student venues at CHI 2012 include our doctoral consortium—an intimate opportunity for extensive mentoring and peer support; student research and design competitions, and the games competition. Come see the competition finalists! And let's not forget CHI Madness—a frenetic but highly efficient whirlwind tour through each day's technical papers. Even before we "formally" open the conference Monday morning, we will have had an intensive weekend of workshops where CHI attendees gather to address emerging fields, tackle challenging questions, and simply support each other in areas of common interest. The mutual support continues both in formal SIG gatherings and in informal gatherings in the convention center halls and at tables in our exhibit hall. We particularly invite you to gather together in affinity groups built around our nine communities—these communities not only shape our program, they also can help enrich your experience as an attendee.

In the end, though, it is been quite an Experience! for us. We are grateful to all the dedicated volunteers and staff that have made this conference possible. We appreciate the support of our sponsors and participation of our exhibitors. And most of all, we thank you for joining us here at the conference. We hope you find things some things that are useful, some things that are inspiring, and some things that are just plain fun. We hope you have an incredible CHI 2012 Experience!

Joseph A. Konstan, University of Minnesota
CHI 2012 Conference Chair

Ed H. Chi, Google
Kristina Höök, Mobile Life at KTH
CHI 2012 Technical Program Chairs

Conference Committee

■ CHI 2012 ORGANIZING COMMITTEE

Conference Chair

Joseph A. Konstan, *University of Minnesota*

■ TECHNICAL PROGRAM

Chairs

Ed H. Chi, *Google Research*
Kristina Höök, *Mobile Life @ KTH*

Papers

Susanne Bødker, *Aarhus University*
Dan R. Olsen Jr., *Brigham Young University*

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Amanda Williams, *Wyld Collective Ltd.*
Erica Robles, *New York University*

Case Studies

Daniela Busse, *Samsung Research*
Elizabeth Buie, *Luminanze Consulting LLC*

Courses

Nancy Frishberg, *MSB Associates*
Gregorio Convertino, *Palo Alto Research Center (PARC)*

Doctoral Consortium

Steve Brewster, *University of Glasgow*
Erik Stolterman, *Indiana University Bloomington*

Interactivity

Patrick Baudisch, *Hasso Plattner Institut*
Florian 'Floyd' Mueller, *Exertion Games Lab*
Eva Hornecker, *University of Strathclyde*
Danielle Wilde, *daniellewilde.com*

Panels

Allison Druin, *University of Maryland*
Joseph 'Jofish' Kaye, *Nokia Research Center*

Special Interest Groups (SIGs)

Daphne Raban, *University of Haifa*
Kaisa Väänänen-Vainio-Mattila, *Tampere University of Technology*

Student Design Competition

Gilbert Cockton, *Northumbria University*
Thecla Schiphorst, *Simon Fraser University*

Student Research Competition

Anne Aula, *Google*
Shaowen Bardzell, *Indiana University Bloomington*

Student Game Competition

Seth Cooper, *University of Washington*
Winslow Burleson, *Arizona State University*

Video

Michael Bernstein, *MIT CSAIL*
Jeffrey Bardzell, *Indiana University, Bloomington*

Work-in-Progress (WIPs)

Lichan Hong, *Google*
Henriette Cramer, *Mobile Life @ SICS*

Workshops

Helena Mentis, *Microsoft Research Cambridge*
Ido Guy, *IBM Research Haifa*

■ CHI 2012 COMMUNITIES

Chairs

Arnie Lund, *Microsoft*
Bo Begole, *Samsung's User Experience Center*

Core Communities

Design

Ellen Yi-Luen Do, *Georgia Tech*
Patrick Olivier, *Newcastle University*

User Experience

Jhilmil Jain, *Microsoft*
Kath Straub, *Usability.org*

Engineering

Ruven Brooks, *Independent Consultant*
Fabio Paternò, *CNR-ISTI*

Management

Janice Rohn, *Experian*
Dennis Wixon, *Microsoft*

Featured Communities

Child Computer Interaction

Janet C. Read, *University of Central Lancashire*

Panos Markopoulos, *Eindhoven University of Technology*

Allison Druin, *University of Maryland*

Digital Arts

David England, *Liverpool John Moores University*

Jill Fantauzzacoffin, *Georgia Tech*

Games and Entertainment

Regina Bernhaupt, *IRIT*
Katherine Isbister, *NYU-Poly*

Health

Karen Cheng, *University of California, Irvine*

Julie Kientz, *University of Washington*

Sustainability

Eli Blevis, *Indiana University, Bloomington*
Samuel Mann, *Otago Polytechnic*

■ PARTICIPATION AND VOLUNTEERING

Student Volunteer Coordinators

Vicky McArthur, *York University*
Bobby Beaton, *Virginia Tech*

Madness

Paul André, *University of Southampton*
Petra Sundström, *Salzburg University*

Social Media

Cliff Lampe, *Michigan State University*
Sean McNee, *FTI Consulting*

Publicity

Rosemary Stevens, *Ace Public Relations*
Eelco Herder, *L3S Research Center*

Local Experience

Annette Priest, *Revel Insight*

■ MAKING THINGS HAPPEN

Design Directors

Apala Lahiri Chavan, *Human Factors International*
Srikanth Vellore, *Human Factors International*

Webmaster

William Hudson, *Syntagm Ltd., Hult International Business School*

Posters

Oleg Komogortsev, *Texas State University-San Marcos*

Proceedings

Max Van Kleek, *University of Southampton*
Nirmal Patel, *Georgia Tech*
Alireza Sahami Shirazi, *University of Stuttgart*
Michael Ekstrand, *University of Minnesota*

Mobile Apps

Stephen Oney, *Carnegie Mellon University*
Jason Wiese, *Carnegie Mellon University*
Eiji Hayashi, *Carnegie Mellon University*

Communications Director

Garett Dworman, *Tec-Ed Inc*

Program Production

Joan Johnson, *Joan Johnson Design*
Max Van Kleek, *University of Southampton*
Angela Falcone, *Foundations of Excellence*

Mailing Lists

Adam Sporka, *Czech Technical University*

ACM Staff Liaison

Ashley Cozzi, *ACM*

Sponsors and Exhibits

Carol Klyver, *Foundations of Excellence*

Conference Logistics

Janeé Pelletier, *Conference & Logistics Consultants*
Allison Perrelli, *Conference & Logistics Consultants*

Technology Liaison

Scooter Morris, *University of California, San Francisco*
Sara Drenner, *BI Worldwide*

CMC Liaison

Scooter Morris, *University of California, San Francisco*

Registration

Yvonne Lopez, *Executive Events*
Jill Skuba, *Executive Events*

i-vi CONFERENCE-AT-A-GLANCE

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- 2 Conference Committee
- 2 Advertisements

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- 5 CHI 2012 Overview**
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- 5 Workshops
- 5 Technical Program | Monday — Thursday**
- 5 Choosing and Attending Sessions
- 6 Proceedings Content
- 6 Contemporary Trends**
- 7 Student Competitions**
- Student Design Competition
- Student Game Competition
- Student Research Competition
- 7 Special Events**
- 7 Conference Reception and Exhibits Grand Opening
- 7 Job Fair & Recruiting Boards
- 8 ACM SIGCHI Town Hall Meeting
- 8 Joint Hospitality Reception
- 8 Venue Information**
- 8 Internet Access
- 8 Registration
- 8 The Commons
- 8 Coffee Breaks
- 9 CHI Merchandise
- 9 The CHI Information Booth
- 9 Student Volunteers
- 9 International Relations
- 9 Special Needs
- 9 Speaker Ready Room
- 9 Media/Press Office
- 9 CHI Policies**
- 9 Cell Phone Courtesy
- 9 Name Badges
- 9 Blogging and Photosharing
- 9 Accompanying Persons
- 9 Attire
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- 10 Smoking Policy
- 10 Electrical Power
- 10 Services**
- 10 ATMs
- 10 Shopping and Dining
- 10 First Aid / Emergencies
- 10 Lost and Found
- 10 Business and Other Services
- 10 Austin, Texas, USA**
- 10 City Transportation

11 SIGCHI 2012 AWARDS

- 11 CHI Academy
- 12 SIGCHI Lifetime Research Award
- 13 SIGCHI Lifetime Practice Award
- 13 SIGCHI Lifetime Service Award
- 13 SIGCHI Social Impact Award
- 14 Past Honorees
- 14 SIGCHI Best of CHI Awards

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CHROME IS
6X
FASTER TODAY
THAN ITS
ORIGINAL BETA

3.5 GOOGLERS
AVERAGE SIZE
OF
ENGINEERING TEAMS

6.8M
PEOPLE GOT
'APRIL
FOOLED'
BY
GMAIL MOTION

GOOGLERS LAUNCHED
PEOPLE
FINDER
1 HOUR
AFTER THE DISASTER IN
JAPAN

ADWORDS
IS AVAILABLE IN
97.4%
OF THE WORLD'S
COUNTRIES

5,000
WOMEN
IN 31 OFFICES
MAKE UP THE
WOMEN@GOOGLE
NETWORK

GOOGLE
YOUR FUTURE
GOOGLE.COM/JOBS/UX

Google at CHI 2012

Why is Google *fired up* to be at CHI 2012?

We've designed an engaging presence for CHI 2012 and invite you to check out the variety of ways Googlers are making connections and keeping things *smokin'*!

We're Speaking!

We've *fired up* the grill and hope you'll swing by and say hello to CHI's opening keynote, Margaret Gould Stewart, at the Google Booth inside the Expo Hall (Booths 31 & 32) from 6 - 7pm on Monday, May 7.

Be sure to check out other Googlers in action at CHI!

We're Hanging Out!

We welcome CHI attendees to *head outdoors* with us at the Google booth on the Expo Hall floor. Stop by during breaks and talk with Googlers demonstrating how the *hot off the grill* innovations in user research and design, have influenced our products.

Cook up some conversation with members of our technical team who will be available to chat about their personal experience with solving interesting user research and design challenges at Google and life as a Googler.

We're Playing!

We've *spiced things up* and hope you'll check out our CHI-a-Day. It's Google a Day the CHI way, featuring intriguing trivia questions about HCI and Google where searching for the answer is not only allowed, it's encouraged! Each day's play may make you the winner of great Google gear and prizes!

Want to learn more about Google's presence at CHI as well as Google opportunities?
Scan the QR code or visit goo.gl/QwU9S.

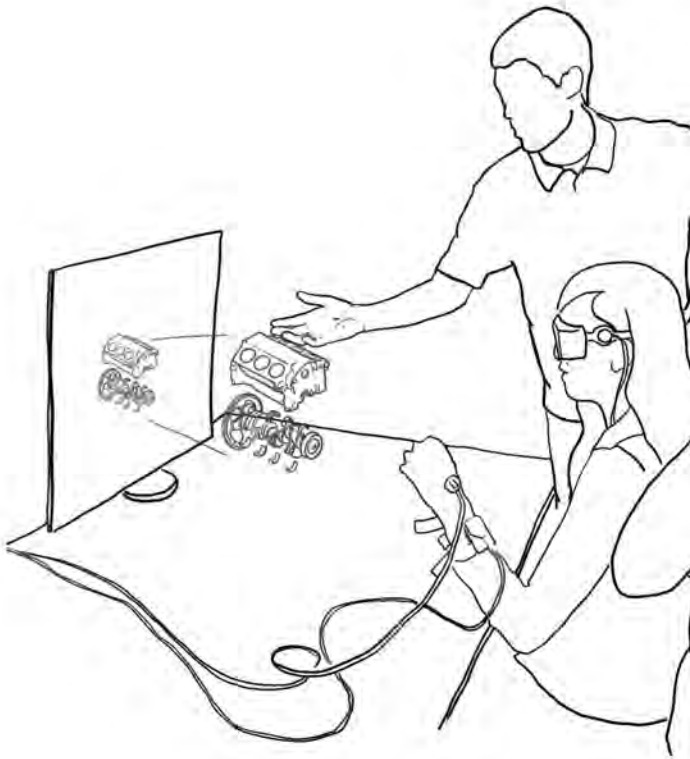


goo.gl/QwU9S

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Iowa State University's graduate program in Human Computer Interaction provides advanced education and training while fostering research excellence in HCI at ISU. We offer an M.S. and Ph.D. in Human Computer Interaction as well as an Online M.S. and Online Certificate for the working professional. Students get the opportunity to work in interdisciplinary research and interact with faculty from all seven colleges at Iowa State. We strongly believe in including many perspectives when building great solutions, which is why we take pride in our diverse student population. The HCI Graduate Program is administered by the Virtual Reality Applications Center, which gives students the opportunity to work in state of the art facilities to aid their research.

For more information email hci@iastate.edu or visit hci.iastate.edu



HCI Graduate Program
1620 Howe Hall . Ames, IA 50011 . 515-294-2089

THE MAGIC OF metro

FAST AND FLUID
DIGITALLY AUTHENTIC
DO MORE WITH LESS
PRIDE IN CRAFTSMANSHIP
WIN AS ONE

The Magic of Metro is Microsoft's theme for CHI this year. Stop by the booth and experience the magic of Metro applications with cutting edge demos. Pick up swag. Enter to win Microsoft hardware, software, and games. Meet our researchers and designers.

LOOKING FOR YOUR NEXT OPPORTUNITY TO CHANGE THE WORLD?

At Microsoft, our User Experience community thrives on Creativity, Innovation, and Impact. Interested in joining our team? Stop by the Microsoft booth to talk to current employees or recruiters. For UX job postings at Microsoft, go to <http://aka.ms/CHI2012>.

SOME OF THE GREAT EVENTS AND DEMOS AT THE MICROSOFT BOOTH

TUESDAY MAY 8TH

10:50am-11:30am Designing hardware at Microsoft's applied sciences' group, Cati Boulanger
3:50pm-4:30pm Embracing the magic of Kinect, Steward Tansley

WEDNESDAY MAY 9TH

10:50am-11:30am Designing for Windows 8, Sara Summers
3:50pm-4:30pm DigitalArt, a preview, Charla Pereira

THURSDAY MAY 10TH

10:50am-11:30am TouchDevelop: End-user programming for mobile services, Nikolai Tillmann, Peli de Halleux, Arjmand Samuel.

Microsoft
BOOTHS 36, 37, & 38

UX/AUSTIN

UXAustin.com is a community within Door64,
Austin's largest technology organization.

Door64 and UX/Austin will host the June 29 **PainPoint Job Fair***,
the **2013 UX/Austin Conference**, and more Austin-area events.

Visit our booth in the exhibit hall for discounted
attendee and exhibitor packages for CHI attendees and sponsors.

Thank you for visiting Austin, our favorite city in the world.

* UI/UX was identified this spring by employers
as a one of the four most critical hires in Austin
in the quarterly Door64 Hiring PainPoint Survey.

door64[®]
AUSTIN HIGH-TECH ONLINE

user experience @ intel

Enabling a new era of computing. We are hiring!



Positions primarily based in Santa Clara, CA and Hillsboro, OR.

Full-time Positions

Mobile & Communications Group

The recently formed Intel Mobile & Communications Group (MCG) is responsible for establishing Intel as the provider of revolutionary handset & tablet experiences. Working with other U/X experts across the corporation we will continue to evolve Intel's long-standing emphasis on the importance of understanding (and designing for) the human experience in technological innovation. We are tremendously excited about this unique opportunity to lead a major product division from a human-centered perspective. We are looking for a select few, exceptionally talented folks to join our team and bring the next generation of smartphone and tablet experiences to life.

Senior Human Factors Engineers

(Job #620351)

Drive use case definition, user experience assessment and measurement. Drive the integration of user experience with Intel's core business processes.

Human Factors Engineers

(Job #620353)

Define usage models or use cases. Manage field studies, usability tests, or experimental research.

Senior Experience/Interaction Designers

(Job #620346)

Serve as user experience design lead on technology research initiatives. Contribute from early research phases through to prototype and production.

Interaction Designers

(Job # 620348)

Deliver U/X concepts, interaction flows and visual design for Intel reference designs and Intel enabled mobile applications.

Perceptual Computing Group

We are tasked with expanding the interactive capabilities of traditional computers. We recently demonstrated laptop-based gesture concepts at the CES conference, and we have a number of other highly secret projects on the go.

Human Factors Engineer

(Job #618218)

Successful applicants will be adept at designing and running experiments, prototyping new software and hardware concepts, and defining brand new interactive environments from the ground up.

Internships

User Experience Research & Design Interns

(Interaction & Experience Research, Intel Labs)

Help us understand what people love about digital devices and services through competitive analysis, user research, and design strategy. Our group explores new interactions incorporating the social contexts of people with new technologies.

Email resume to: lisa.kleinman@intel.com

Human Factors Engineering Intern

(Perceptual Computing Group)

Identify and evaluate novel usages, gather requirements, conduct research at all phases of product/technology development.

Email resume to: cynthia.e.kaschub@intel.com

More information is available at the recruiting boards in the poster area, or <http://www.intel.com/jobs>

Representatives from Intel are available for questions at the recruiting boards on Tuesday evening during the Job Fair.

We Provide You with the Latest Research, Techniques, and Methods

Special Offer for ACM SIGCHI Members

**SAVE
20%**



"If you care about Interaction Design, you should own this book. Exhaustive coverage by world authorities. ... one book that covers the gamut. Highly recommended, highly practical."

—Don Norman, Northwestern University

• • • • •

"Comprehensive and thorough coverage of all the important issues related to user interfaces and usability. A useful reference work for anybody in the field..."

—Jakob Nielsen

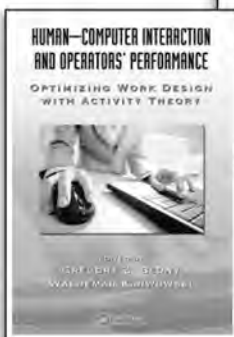
- Balances coverage of research, development, and practice
- Contains a new, globally authored chapter on changing HCI to change the world
- Presents contributions from experts from 14 countries
- Includes a preface written by HCI pioneer, Ben Shneiderman

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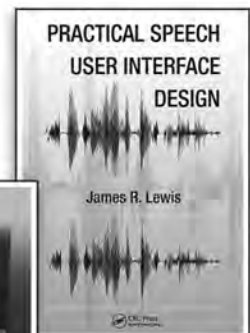
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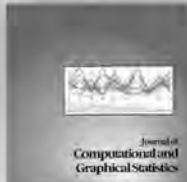


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Enjoy Free Access to 3 Highly Ranked Journals Published by Taylor & Francis.

As an attendee of CHI2012, we are pleased to offer you FREE access to the latest issues of our 3 preeminent Human-Computer Interaction titles.



Impact Factor
of 1.206!*

Journal of Computational and Graphical Statistics

Editor-in-Chief: Richard A. Levine,
San Diego State University

The *Journal of Computational and Graphical Statistics*, an official journal of the *American Statistical Association*, presents the very latest techniques on improving and extending the use of computational and graphical methods in statistics and data analysis. Established in 1992, this journal contains cutting-edge research, data, surveys, and more on numerical graphical displays and methods, and perception. Articles are written for readers who have a strong background in statistics but are not necessarily experts in computing.

tandfonline.com/r/JCGS



Impact Factor
of 0.681!*

The International Journal of Human Computer Interaction

Editors-in-Chief:
Julie A. Jacko, University of Minnesota
Gavriel Salvendy, Purdue University
and Tsinghua University

The *International Journal of Human-Computer Interaction* addresses the cognitive, social, health, and ergonomic aspects of interactive computing. It emphasizes the human element in relation to the systems in which humans function, operate, network, and communicate, including software, hardware, and their various contexts of use. The journal publishes original articles including reviews and reappraisals of the literature, empirical studies, and quantitative and qualitative contributions to the theories of HCI.

tandfonline.com/HIHC



Impact Factor
of 4.000!*

Human Computer Interaction

Editor-in-Chief: Thomas Moran,
IBM Almaden Research Center

An interdisciplinary journal defining and reporting on the challenging issues in making computational technology work for people, *Human-Computer Interaction* publishes theoretical, empirical, and methodological articles on the user sciences and system design as it affects individual users, work

groups, communities, and social and organizational settings.

tandfonline.com/HHCI

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■ **ACM SIGCHI**

CHI 2012 is sponsored by ACM's Special Interest Group on Computer-Human Interaction (ACM SIGCHI).

ACM, the Association for Computing Machinery, is an educational and scientific society uniting the world's computing educators, researchers, and professionals to inspire dialogue, share resources, and address the field's challenges. ACM strengthens the profession's collective voice through strong leadership, promotion of the highest standards, and recognition of technical excellence. ACM supports the professional growth of its members by providing opportunities for life-long learning, career development, and professional networking. ACM offers its more than 100,000 worldwide members cutting edge technical information through world class journals and magazines, dynamic special interest groups, and globally recognized conferences. Visit www.acm.org for more information about the ACM.

SIGCHI is the premier international society for professionals, academics, and students who are interested in human-computer interaction (HCI). We provide a forum for the discussion of all aspects of HCI through our conferences, including our flagship CHI conference, publications, web sites, email discussion groups, and other services. We advance education in HCI through courses, workshops, and outreach, and we promote informal access to a wide range of individuals and organizations involved in HCI. Members can be involved in HCI-related activities with others in their region through local SIGCHI chapters. Come to the SIGCHI Town Hall meeting on Wednesday at 12:50 in Meeting Room 16AB, 4th Floor or visit www.sigchi.org to learn more about SIGCHI.

Membership Information

Please contact ACM's Member Services Department

Online: www.acm.org

Tel: +1-800-342-6626 (USA/Canada)
+1-212-626-0500 (International)

Fax: +1-212-944-1318

Email: acmhelp@acm.org

Write: Association for Computing Machinery, Inc.
General Post Office
P.O. Box 30777
New York, NY 10087-0777, USA

■ **CHI 2012 OVERVIEW**

The CHI 2012 technical program showcases presentations of outstanding research in human-computer interaction (HCI), demonstrations of new and innovative technology, discussion of timely and controversial issues, and presentations of the latest developments in HCI design and practice.

The CHI technical program includes presentations in multiple formats.

■ **PRE-CONFERENCE (INVITED ONLY) | SATURDAY & SUNDAY**

Doctoral Consortium

The Doctoral Consortium provides an opportunity for selected doctoral students to explore their research interests in an interdisciplinary workshop with other students and a group of experienced researchers. Posters displaying the Doctoral Consortium participants' work will be on display in the Poster Area in the Commons (Exhibit Hall 4, Level 1) of the Austin Convention Center. Brief descriptions of each poster can also be found in the CHI 2012 Extended Abstracts.

Doctoral Consortium Faculty:

Erik Stolterman (Co-chair), *Indiana University Bloomington, USA*
Stephen Brewster (Co-chair), *University of Glasgow, UK*
Per Ola Kristensson, *St Andrews University, UK*
Youn-kyung Lim, *KAIST, Korea*
Mikael Wiberg, *Uppsala University, Sweden*
Katie Siek, *University of Colorado at Boulder, USA*

Workshops

Workshops provide a valuable opportunity for small communities of people with diverse perspective to engage in rich one- and two-day discussions about a topic of common interest. Workshop participants are pre-selected based on submitted position papers. Workshops that choose to produce posters will have their posters on display in the Commons (Exhibit Hall 4, Level 1).

■ **TECHNICAL PROGRAM | MONDAY — THURSDAY**

CHOOSING AND ATTENDING SESSIONS

With so many presentations happening at once, how do you choose? CHI 2012 has put some resources in place to help you make the most of your conference experience:

1. The Conference Program that you are reading now contains a brief description of every piece of content that will be displayed during the conference.
2. The CHI 2012 Conference Proceedings and Extended Abstracts contain the articles that were selected for presentation during the conference. Extra DVDs of the Proceedings and Extended Abstracts are available for sale at the Registration Desk.
3. Conference volunteers are also available to answer any questions you may have.
4. To help you decide how to spend your time during the day, each morning we present CHI Madness, a fast-paced overview of many of the presentations of the day.

CHI Madness (20–25 sec presentations)

At the beginning of each day, presenters give a fast-paced overview of the day's papers and notes. Although it means coming in early, Madness is probably the most time-efficient way to see an overview of the CHI program each day.

■ PROCEEDINGS CONTENT

Research papers and notes document work that makes a lasting and significant contribution to our knowledge and understanding of human-computer interaction. Papers and Notes publications appear in the CHI Proceedings.

CHI Papers (20 min presentations)

CHI Papers present significant contributions to research, development, and practice in all areas of the field of human-computer interaction. All accepted papers were rigorously reviewed. Papers in the CHI Proceedings are read and cited worldwide and have a wide impact on the development of HCI principles, theories, techniques, and practical application.

CHI Notes (10 min presentations)

CHI Notes are briefer and more focused than CHI Papers, but follow the same strenuous review process. The goal of CHI Notes is to increase diversity of the fully reviewed technical program by encouraging submissions that might not fit well within the traditional CHI Papers program.

ToCHI Papers (20 min presentations)

Papers from the journal, ACM Transactions on Computer-Human Interaction (ToCHI), will be presented orally at CHI. Authors of papers that were published over the prior year in ToCHI have the opportunity to share their work with you here at CHI.

■ CONTEMPORARY TRENDS

Contemporary Trends provoke, intrigue, and inspire the CHI audience. These submissions record the history of HCI practice. The publications behind the selection of these presentations appear in the CHI Extended Abstracts.

Courses (one to three 80 min units)

The goal of Courses is to provide professional development opportunities to existing or prospective HCI community members. Courses are strictly limited and pre-registration is required; the Course notes you receive at registration will serve as your entry ticket. You may register for courses that have not yet been filled at the registration desk in the lobby area on Level 1.

Case Studies (10 or 20 min presentations)

Case Studies provide researchers and practitioners a venue to present empirical inquiries that investigate particular phenomena within a real-world context. Case Studies are discussions of the practice of HCI based on real world experience, described and generalized such that their value extends beyond the specific cases that are reported.

Panels (80 min sessions)

Panels allow audience members to understand and interact with different perspectives on an emerging or controversial topic. These sessions stimulate thought and discussion about contemporary trends of interest to the community. Panels are varied in their structure and mechanisms for interaction, but all provide considerable time and attention for collecting and responding to audience concerns.

Special Interest Groups (SIGs) (80 min sessions)

Special Interest Groups (SIGs) enable conference attendees who share similar interests to meet and conduct facilitated discussion.

alt.chi (15 min presentations)

alt.chi opens the conference up for unusual, challenging, and thought-provoking work that might not otherwise be seen. alt.chi is a place to experiment with how CHI submissions are presented, submitted, reviewed, and selected. These sessions allow the controversial, hard to publish, and/or alternative perspectives on HCI to express themselves in a format that encourages lively audience participation.

CHI Communities' Invited Events

Community events sessions offer a variety of panels, talks, and presentations from practitioners and researchers at the forefront of their respective communities. You will see a number of "invited" panels, courses and SIG meetings in the program that have been coordinated by specific Communities.

Video Showcase (80 min session)

The videos track is a forum for human-computer interaction that leaps off the page: vision videos, reflective pieces, humor, novel interfaces, studies and other moving images relevant to HCI. This year's selections will premiere on Tuesday morning, during the 11:30 session. There will be an encore performance at 19:00, Tuesday evening, culminating in the Golden Mouse award ceremony. Popcorn and drinks are available at the evening performance.

Interactivity (demos)

Interactivity is your chance to fully engage at a personal level by touching, squeezing, hearing or even smelling interactive visions for the future: they come as prototypes, demos, artworks, design experiences as well as inspirational technologies. Interactivity is also an alternative to the traditional textual format at CHI to disseminate advancements in the field. Interactivity promotes and provokes discussion about the role of technology by actively engaging attendees one-by-one. There is a Permanent Collection (available throughout most of the conference) and a Limited Time Collection (available at a specific time on Tuesday and Wednesday). Presenters will be available to interact with attendees at specific times.

- Monday 18:00–20:00 (Opening Reception)
- Tuesday 15:50–19:00 (Highlight on Interactivity)
- Wednesday morning, lunch, and afternoon breaks
- Thursday morning break

Work-in-Progress (posters)

The Work-in-Progress (WIP) posters offer a great venue to show exciting new work that is in an early stage and can benefit from discussion with colleagues. We encourage practitioners and researchers to visit the Work-in-Progress posters to see new work, provide feedback and engage in discussions and collaborations. Work-in-Progress posters will be displayed in the Commons (Exhibit Hall 4, Level 1) in two groups: Group 1 posters will be available for viewing on Monday and Tuesday, and Group 2 posters will be available for viewing on Wednesday and Thursday. Work-in-Progress authors will be available near their posters during the “Interact with Poster Authors” coffee breaks (Tuesday morning for group 1, and Thursday morning for group 2).

Doctoral Consortium (posters)

Students who participated in the pre-conference Doctoral Consortium will display their posters throughout the conference in the Commons (Exhibit Hall 4, Level 1). The students will be available at their posters for discussion during the Wednesday morning “Interact with Poster Authors” session.

■ STUDENT COMPETITIONS

Student Design Competition (posters and brief presentations)

This year’s Student Design Competition (SDC) challenge is to design an object, interface, system, or service intended to help us to develop and share awareness, understanding or appreciation for our domestic experience as it relates to space, place, and threshold. Students were asked to find new solutions, new groups of people and new issues that could benefit from the application of good design with appropriate technology. Students were also asked to apply appropriate design methods such as ethnography, contextual and phenomenological research to understand the problem space, and develop human-focused design solutions to support, assist, enhance or otherwise benefit their target audience.

The top fifteen entries were selected from 61 submissions. The finalists were invited to submit a poster detailing their solutions. Students’ work will be displayed in the Commons (Exhibit Hall 4, Level 1). SDC judges will select four finalists to present their work in a special SDC session on Wednesday. See if you can guess the winners, who will be announced at the end of the Closing Plenary on Thursday!

Student Game Competition

The Games and Entertainment Community created this competition to showcase student work in areas of game design and development that connect strongly to the CHI community of research and practice. Students submitted games as well as extended abstracts clarifying innovative aspects of their work. The jury selected three finalist games in each category—Serious Games, and Innovative Interface—and the winner in each category will be announced at the awards session on Tuesday afternoon. CHI attendees can play the games at the Interactivity session in the Commons (Exhibit Hall 4, Level 1) directly after the awards session. Winners will also be announced at the Closing Plenary on Thursday.

Student Research Competition (posters and brief presentations)

The Student Research Competition provides a forum for undergraduates and graduate students to share their research results, exchange ideas, and improve their communication skills, while competing for prizes. The CHI competition is a branch of a broader ACM Student Research Competition sponsored by Microsoft Research. Student Research Competition entries will be displayed as posters in the Commons (Exhibit Hall 4, Level 1), and finalists will present their work in a conference session on Wednesday morning. Winners will be announced at the Closing Plenary on Thursday.

■ SPECIAL EVENTS

Conference Reception & Exhibits Grand Opening

The Commons (Exhibit Hall 4, Level 1)
Monday, 18:00 – 20:00

Kick off CHI 2012 at the Grand Opening Reception, located inside The Commons. The Commons is the ideal place to catch up with old friends and meet new ones. The reception will feature the best that Austin has to offer, including Texas style cuisine and entertainment. Austin is the Live Music Capital of the World, after all! Following the reception, we hope that you will take advantage of all the restaurants that Austin has to offer – from classic Texas BBQ to authentic Mexican cuisine. Gather a group of colleagues for an informal dinner to satisfy your Texas-sized appetites in the famous 6th Street Music District.

Admission to the opening reception is included with your conference registration; additional tickets may be purchased at the Registration Desk. Tickets will not be available at the door.

Job Fair & Recruiting Boards

The Commons (Exhibit Hall 4, Level 1)
Tuesday, 17:00 – 19:30

CHI 2012 is featuring a Job Fair on Tuesday evening. Recruiters and job candidates are invited to take advantage of this key event. Visit the Recruiting Boards and designated exhibit booths throughout the conference to find out more about available positions.

General Information

CHI 2012 Champion Sponsor Recruiters:

Autodesk	Booth 33, Recruiting Board
Bloomberg	Booths 1–2, Recruiting Board
eBay/Paypal	Booths 6–8, Recruiting Board
Google	Booths 31–32, Recruiting Board
Microsoft	Booths 36–38, Recruiting Board
SAP	Booth 10, Recruiting Board

CHI 2012 Contributing Sponsor Recruiters:

Facebook	Booth 24, Recruiting Board
Iowa State University	Recruiting Board
Nokia	Recruiting Board

CHI 2012 Other Recruiters

Bestica, Inc.	Booth 19
Citrix Systems, Inc.	Booth 28
Door64	Booth 26
Intel	Recruiting Board
Iowa State University	Recruiting Board
Northrop Grumman	Booth 3, Recruiting Board
Samsung	Booth 22, Recruiting Board
University of Colorado, Boulder	Booth 25

ACM SIGCHI Town Hall Meeting

Meeting Room 16AB, 4th Floor.
Wednesday, May 9, 12:50 – 14:30

SIGCHI officers will present ongoing programs and activities, followed by an audience Q&A session. Participants interested in shaping SIGCHI's future are encouraged to attend.

Joint Hospitality Reception

Bob Bullock Texas State History Museum
1800 North Congress Avenue, Austin, Texas
Wednesday, 18:30 – 20:30

This year, a joint hospitality reception will be held at the beautiful Bob Bullock Texas State History Museum. Your badge is your ticket to enter the museum (and transportation), so please be sure to wear it. Delicious Texas-style hors d'oeuvres will be served, and a full bar is available. (You pick up your drink tickets at the door). In addition to meeting our hosts and networking with old and new colleagues in this lovely venue, you can visit all of the fascinating exhibits which will be specially open for our conference attendees. The well-stocked gift shop will also offer a special 10% discount on all purchases this evening.

Buses will be running throughout the event to take you to and from the museum. Pick up and drop off will take place in front of the convention center.

CHI Champion Hosts:

Bloomberg	Google, Inc.
eBay/PayPal	Microsoft Corp

Friend of CHI Host:

Samsung UX Center America

Other Hosts:

IBM
Virginia Tech, University of California Irvine, University of Maryland, Iowa State University, and Cornell University

■ VENUE INFORMATION

Internet Access

Wireless high-speed internet access and access to power your mobile devices is being provided in the internet café area of The Commons (Exhibit Hall 4, Level 1) by CHI 2012. We encourage you to visit the Internet Café to jump online and informally chat with colleagues in a relaxed environment. Please be considerate of your colleagues and limit your time spent online. Hard wire connections and computers are not provided. Internet access in the official CHI 2012 hotels is provided by the hotel and included in your CHI 2012 room rate. Wireless internet is also provided throughout the conference center and in all meeting rooms, courtesy of the Austin Convention Center.

Registration

Level 1 Foyer

The CHI 2012 Registration area is located on Level 1 of the Austin Convention Center. On-site registration for the conference and courses (subject to space availability) is located there.

Registration Hours:

Saturday	7:30 – 12:00
Sunday	7:30 – 17:30
Monday	7:30 – 19:30
Tuesday	7:30 – 18:30
Wednesday	7:30 – 17:30
Thursday	7:30 – 16:00

The Commons

Exhibit Hall 4, Level 1

The Commons is a large central area that is the site for all main conference breaks, exhibits, posters, and other interactive activities. Seating areas make The Commons the perfect place to meet with old or new friends, enjoy a refreshing beverage during a coffee break, or just relax between sessions. Concession stands will be open during the lunch breaks on Tuesday and Wednesday.

Commons Hours:

Monday	18:00 – 20:00 (Opening Reception)
Tuesday	10:00 – 19:00
Wednesday	10:00 – 17:30
Thursday	10:00 – 13:30

Coffee Breaks

Regularly scheduled morning and afternoon coffee breaks are complimentary for all registered CHI 2012 delegates. The coffee break schedule is as follows:

Monday	10:50 – 11:30: 4th Floor Foyer (Level 4) 15:50 – 16:30: 4th Floor Foyer (Level 4)
Tuesday	10:50 – 11:30: Commons/Exhibit Hall 4 (Level 1) 15:50 – 16:30: Commons/Exhibit Hall 4 (Level 1)
Wednesday	10:50 – 11:30: Commons/Exhibit Hall 4 (Level 1) 15:50 – 16:30: Commons/Exhibit Hall 4 (Level 1)
Thursday	10:50 – 11:30: Commons/Exhibit Hall 4 (Level 1) 15:50 – 16:30: 4th Floor Foyer (Level 4)

CHI Merchandise

Conference t-shirts, polo shirts, travel mugs, publications, and CDs will be available at the Registration Desk on Level 1. The CHI merchandise desk opens at 12:00 on Monday and will be open during registration hours.

CHI Information Booth

The Commons (Exhibit Hall 4, Level 1)

The info booth is staffed by Student Volunteers who can answer your CHI 2012 questions and assist with recruiting. The CHI Information Booth will be staffed during Commons hours. During other times, participants may stop by the registration desk for conference information.

Student Volunteers

Student Volunteers are a great source of information about the conference. They help give the conference a friendly, helpful face and work hard to assist during the whole conference. Many are working on their Masters or Ph.D.s and some are looking for job or internship opportunities. Please be courteous to them and feel free to ask them questions. You can identify Student Volunteers by their bright t-shirts.

International Relations

CHI 2012 welcomes participants from around the world. Please visit the CHI Information Booth in the Commons or see the registration desk if you have any questions about the conference.

Special Needs

Any special requirements you may need should be relayed to the CHI Information Booth by the registration desk at the earliest time possible. All CHI 2012 meeting space has elevators, restrooms, concessions and telephones designed to accommodate the needs of those with physical impairments. Meeting rooms may be equipped with services for the hearing impaired upon request, dependent upon the facility's inventory. For additional assistance, please check with the Conference Office (Room 10B, Level 3).

Speaker Ready Room

Room 9A (Level 3)

The Speaker Ready Room serves as a central check-in point for speakers and session chairs. Conference speakers may reserve a designated LCD projector in these rooms to help them prepare materials and rehearse for their presentations. Appointments will be taken on a first-come, first-served basis, and should be made with the staff person in the Speaker Ready Room. Please sign up early – only one LCD will be available for speaker preparation.

Speaker Ready Room Hours:

Sunday	13:00 – 17:30
Monday	7:30 – 17:30
Tuesday	7:30 – 17:30
Wednesday	7:30 – 17:30
Thursday	7:30 – 14:30

Media/Press Office

Room 8C (Level 3)

CHI 2012 welcomes members of the media. Please stop by the Media Office to get information on scheduled Media Events this week, and to learn more about CHI 2012, SIGCHI, and future CHI conferences. CHI 2012 media coordinators will be happy to schedule interviews with select authors at the conference. The Media Office will be open at the same hours as Conference Registration.

■ CHI POLICIES

Cell Phone Courtesy

Please be considerate in your cell phone use. CHI 2012 requests that all cellular phones, pagers and other equipment with audible alarms be turned off in all sessions as a courtesy to the presenters and to the other attendees.

Name Badges

Your CHI 2012 name badge serves as your admission pass to conference sessions and events. Please wear your name badge at all times while inside the conference centre. Conference management reserves the right to deny admission to any persons not wearing a CHI 2012 name badge.

Blogging & Photosharing

CHI encourages conference participants to blog CHI while at the event. Please add the category or keyword "CHI 2012" to your blog entries so that others may easily find them. We also encourage photosharing by services such as Flickr. Again, please add the tag "CHI 2012" to your photos. Add "#chi2012" to your tweets to participate in Twitter conversations.

Accompanying Person

CHI 2012 welcomes accompanying persons including children at the conference.

Partners, spouses, and significant others may purchase a "partner's pass" to gain access to all public social functions (including the conference reception), the exhibits, interactivity, and breaks in the commons. Infants are welcome in sessions and at social activities provided they are not a distraction to the other attendees. Children between the ages of 4 and 18 may attend sessions and social activities by purchasing a "partner's pass," again providing they are not a distraction to the other attendees.

You may purchase a "partner's pass" at the CHI Registration Desk.

Attire

Attire for CHI 2012 is casual.

General Information

Photography and Recording

Photographing crowd scenes and people interacting with the exhibits and other displays is common at CHI conferences and attendees should be aware that their image might be captured. At the same time, we encourage the practice of common courtesy when taking photos of individuals that are intended to be uploaded to Flickr, Facebook, or similar sites. Please ask permission before posting pictures of specific individuals for public consumption.

The use of any type of audio or video recording device is not permitted during any part of the conference.

Smoking Policy

CHI conferences are smoke-free and the convention center is a non-smoking facility. Smoking is only permitted outside of the facility in the designated areas.

Electrical Power

It is ACM SIGCHI policy to use the local power source. Electrical outlets in the United States are 120 volts. If you are traveling from outside of the United States, you will need an adapter to use your small appliances if they are designed for a different standard. CHI 2012 does not provide power converters, extension cords, power strips or other electric accessories.

■ SERVICES

ATMs

Two ATMs are in the Austin Convention Center: one outside of Exhibit Hall 5 pre-function on Fourth Street and one outside of Exhibit Hall 2 pre-function on Trinity Street.

Shopping & Dining

The Austin Convention Center is located in an urban area of Austin offering many restaurants within walking distance. Austin food trucks are also a great local option to grab a quick lunch during the break. Visit austinfoodcarts.com to find an option and location that interests you. The Austin Convention Center is also located within blocks of the famous 6th Street district for a plethora of restaurants and live music! For additional information, visit the Austin Concierge Desk located near registration.

First Aid / Emergencies

Your safety is our primary concern. In case of an emergency, please contact the registration desk or the Conference Office (located in Room 10B on Level 3) immediately for assistance. The Austin Convention Center Security Department will respond to all emergencies inside the building. Dial 911 or the Emergency Line (512-404-4111) from any phone in the event of a true emergency.

Lost & Found

Please turn all lost and found items in to the Registration Desk. CHI 2012 management will then turn lost and found items over to building security at the conclusion of the conference.

Business & Other Services

Although there is not a business center located inside the Austin Convention Center, there are several nearby resources for copying and other business services. For assistance, visit the Austin Concierge Desk located near registration.

Business centers are also located in many area hotels. Please see hotel staff for hours, rates, and additional information.

■ AUSTIN, TEXAS, USA

Austin is an eccentric, unique destination full of diverse culture, local flair and of course, live music! Austin is the Live Music Capital of the World® boasting over 200 live music venues just in the downtown area. Austin prides itself on its rare mix of coffee shops, eccentric stores, restaurants, food trucks and festivals. Visitors should be sure to make time to explore the Austin City Limits including, the iconic Congress Street Bat Bridge – home to over 1.5 million bats! – and the 6th Street entertainment district. When the sun goes down 6th street's pubs, restaurants and nightclubs on 6th Street come alive!

The CHI 2012 venue is centrally located, surrounded by the urban downtown with restaurants, hotels and shopping as well as a few block from the iconic Lady Bird Lake.

Want more? **Visit the Austin Concierge Desk, located near registration, to...**

- Learn more about Austin's rich downtown environment with plenty of entertainment, including live music playing at more than 100 venues on any given evening.
- Hear about the famous Sixth Street and Warehouse District areas.
- Enjoy a different pace. Visitors can enjoy a stroll or a jog along beautiful Lady Bird Lake, which bisects the center of town and is bordered by 10 miles of hike-and-bike trails.
- Join the crowd congregating on the shores of Lady Bird Lake, just below the Congress Avenue Bridge, to watch as 1.5 million Mexican free-tail bats take flight for the evening.

City Transportation

Austin's mass transit system, which includes MetroRail and MetroBus, provides an inexpensive way to navigate the city. The Downtown MetroRail Station, conveniently located outside the Austin Convention Center, is within walking distance to many local bus routes that can help you get wherever you need to go.

For more information on getting around Austin, visit the Austin Concierge Desk, located near registration.

■ CHI ACADEMY

The CHI Academy is an honorary group of individuals who have made extensive contributions to the practice and study of HCI and who have led the shaping of the field.

This year we have elected seven new Academy members. In alphabetical order, they are:

Ben Bederson

Ben Bederson is a Professor of Computer Science at the University of Maryland and past Director of the Human-Computer Interaction Laboratory. Ben is well known for his pioneering work in zoomable user interfaces and visualization techniques for a variety of devices. Ben has a strong record of publications and core achievements in software toolkits and applications. He has consistently applied his research to social concerns including electronic voting systems and technologies for children. He won the SIGCHI social impact award as well as three Microsoft and four Google research awards. Ben has also pursued technical transfer of his research to industry as co-founder and chief scientist of Zumobi, a startup to commercialize mobile media, and most notably as co-founder and technical director of the International Children's Digital Library Foundation (ICDL at www.childrenslibrary.org), a library of free online children's books from around the world. ICDL has won the American Library Association President's 2010 Award for International Library Innovation.

Steve Benford

Steve Benford is Professor of Collaborative Computing and co-founded the Mixed Reality Laboratory at The University of Nottingham in the UK, where he researches interactive technologies for the creative industries. Steve's contributions range from theory to technical development to participatory design and artistic practice. His early contributions include a classic model of interaction in Collaborative Virtual Environments, as well as work on embodiment, time and persistence in virtual worlds. Later, his interests encompassed mixed reality and ubicomp, which merged with a longstanding interest in technologies for art and performance. For more than ten years now, Steve has worked with artists, ethnographers and scholars from the arts and humanities to create, tour and study a series of mixed reality performances. In addition to leading the technical development of these works, ethnographic studies of these and related pieces have led Steve to document the challenges of supporting live interactive experiences, ultimately informing theoretical work on ambiguity, spectator interfaces, and trajectories. Steve has published over 250 academic papers (receiving best CHI paper awards in 2005, 2009 and 2011). His artistic collaborations have led to the award of the 2003 Prix Ars Electronica for Interactive Art, the Nokia 2007 Mindtrek award for innovative applications of ubiquitous computing, and four British Academy of Film and Television Arts (BAFTA) nominations.

Hugh Dubberly

Hugh Dubberly is a design planner and teacher. He graduated from Rhode Island School of Design with a BFA in graphic design and earned an MFA in graphic design from Yale. He has deep roots in typography. At Apple Computer in the late 80s and early 90s, Hugh managed cross-functional design teams and later managed creative services for the entire company. While at Apple, he co-created a technology-forecast film called "Knowledge Navigator," that presaged the appearance of the Internet in a portable digital device. While at Apple, he served at Art Center College of Design in Pasadena as the first and founding chairman of the computer graphics department. Intrigued by what the publishing industry would look like on the Internet, he next became Director of Interface Design for Times Mirror. This led him to Netscape where he became Vice President of Design and managed groups responsible for the design, engineering, and production of Netscape's Web portal. In 2000, Hugh co-founded Dubberly Design Office, putting people at the center of design of a broad spectrum of products for many influential companies. He writes the "Modeling" column for *interactions* magazine. Hugh's Concept Maps are a powerful articulation and teaching tool for designing and explaining complex ideas and products.

Carl Gutwin

Carl Gutwin is Professor of Computer Science and director of the Human-Computer Interaction lab at the University of Saskatchewan, and is a past holder of a Canada Research Chair in Next-Generation Groupware. He received his PhD in 1997 from the University of Calgary, where he developed the idea and nuances of workspace awareness as a design factor for distributed groupware systems. Dr. Gutwin has varied research interests in Computer-Supported Cooperative Work and Human-Computer Interaction, including group awareness, groupware usability, interaction techniques, human performance modeling, and information visualization. His work spans the breadth of HCI, and his contributions range from hard-core technical aspects of systems architectures, to the design and implementation of interaction techniques, to social theory as applied to design. He and his students and collaborators have published more than 150 papers in CSCW and HCI, and have received several best paper and honorable mention awards. Dr. Gutwin was papers co-chair for CHI 2011 and general co-chair of CSCW 2010. He has also served on program committees for CHI, CSCW, UIST, Group, ECSCW, GI, and several other conferences.

Joy Mountford

S. Joy Mountford is currently a consultant to eBay on the future of ecommerce. Through her long career in human-computer interaction she has been an internationally recognized leader in the field. She has designed and led teams designing a wide variety of systems. She has led teams designing and developing a wide variety of computer systems. She was a VP of User Experience Design at Yahoo!, a VP of Digital User Experience and Design at Barnes & Noble and an Osher Fellow at the Exploratorium in San Francisco, CA. She was a senior project lead at Interval Research, and continues to consult to a variety of companies and to present innovative talks world-wide. She headed the acclaimed Human Interface Group at Apple in the late '80s and '90s, beginning her career as a designer at Honeywell and a project leader in the Interface Research Group at Microelectronics Computer Consortium (MCC). Her impact continues through the International Design Expo, which she created over 20 years ago to challenge the next generation of interdisciplinary graduates.

Alan Newell

Alan Newell, Emeritus Professor at Dundee University, has spent over forty years conducting HCI research, primarily into supporting elderly and disabled people. He founded and headed the University's School of Computing, and later set up within it the Queen Mother Research Centre, now one of the largest academic groups in the world researching digital systems for older and disabled people. His team developed stenograph transcription systems and television subtitling systems for the deaf and hearing-impaired, and a range of communication systems for non-speaking people. More recently the team has investigated techniques for use in studying older people, including those with dementia, and for developing systems to support them. Alan pioneered the use of Interactive Professional Theatre for gathering requirements and increasing awareness of this field. Since then he has made presentations of Interactive Theatre events at a number of international conferences, showing how this technique addresses the challenges that older people face with technology. He has published widely, and has given numerous keynote lectures at conferences in Europe, North America and Japan, including InterCHI'93 and ASSETS 2002. Jointly with colleagues, he received best paper awards at the IEEE International Conference on Systems, Man and Cybernetics, and at the ACM Conference on Assistive Technologies. In his recent book, *Design and the Digital Divide*, he describes his research and the insights he has gained from it. He was a Deputy Principal of Dundee University between 1992 and 1995. He is a Member of the Order of the British Empire, a Fellow of the British Computer Society, a Fellow of the Royal Society of Edinburgh, and an Honorary Fellow of the Royal College of Speech and Language Therapy. He was named ACM Fellow in 2006 for his contribution to computer-based systems for people with disabilities, and was awarded the SIGCHI Social Impact Award in 2011.

Yvonne Rogers

Yvonne Rogers is a professor of Interaction Design and director of the Interaction Centre at University College London (UCLIC), UK. Yvonne's career spans the UK and US; before joining UCL she was a professor at the Open University (UK), Indiana University (US), and Sussex University (UK). She has also been a Visiting Professor at Stanford, Apple, Queensland University and University of California – San Diego. She is known for her wide range of contributions to HCI, beginning with her PhD work on iconic interfaces, to her most recent work on public displays and behavioral change. Her research focuses on augmenting and extending everyday learning and work activities with a diversity of interactive and novel technologies. She has developed several influential theoretical frameworks in HCI, including external cognition and distributed cognition. She is also known for promoting a visionary research agenda of user engagement in ubiquitous computing. She was one of the principal investigators on the UK Equator project (2000-2007), where she pioneered and experimented with ubiquitous learning. Yvonne loves writing and is one of the authors of the bestselling textbook, *Interaction Design; Beyond Human-Computer Interaction*, and more recently, *Being Human: Human Computer Interaction in the Year 2020*. She has served on numerous conference committees and advisory boards, and was recently elected a Fellow of the British Computer Society.

Congratulations to this year's Academy inductees.

■ SIGCHI LIFETIME RESEARCH AWARD

Along with the Lifetime Practice Award, this is the most prestigious award SIGCHI gives. The criteria for achievement are the same as for the CHI Academy, only more so.

This year we present the Lifetime Research Award to:

Dan Olsen

Dan Olsen Jr. is a Professor of Computer Science at Brigham Young University and was the first director of the CMU Human-Computer Interaction Institute at CMU. He is one of the earliest and most influential researchers in the user interface software domain. His first contributions were in using formal language techniques (such as finite state machines and Backus-Naur Form) to specify the syntactic structure of a user interface. He has published three books on user interface software: *Building Interactive Systems: Principles for Human-Computer Interaction*, *Developing User Interfaces*, and *User Interface Management Systems: Models and Algorithms*. His 1988 MIKE system was an early and influential system for automatically generating a user interface from semantic specifications. Dan has continued to make important research contributions and novel systems in a wide variety of areas, from CSCW to Interactive Machine Learning, and developing Metrics and Principles for Human-Robot Interaction. Dan has also received CHI's Lifetime Service Award for his many years of service on behalf of the SIGCHI community. He was the founding editor of TOCHI, and played a key role in establishing the UIST conference and in making it one of the most successful SIGCHI conferences.

■ SIGCHI LIFETIME PRACTICE AWARD

Along with the Lifetime Research Award, this is the most prestigious award SIGCHI gives. It recognizes the very best and most influential applications of human-computer interaction, work that has impacted the field over a career

This year we present the Lifetime Practice Award to:

Joy Mountford

S. Joy Mountford most recently has been a consultant advisor to the VP of Product and User Experience at eBay. In 2010 she was the VP of Digital User Experience and Design for Barnes and Noble managing the color Nook eBook experience, and in 2009 was an Osher Fellow at the Exploratorium in San Francisco, CA. Through her long career in human-computer interaction she has been an internationally recognized leader in the field. Joy has designed and led teams designing a wide variety of systems including airplane cockpits, personal computers, ecommerce, consumer electronics, musical instruments, and toys. She was a VP of User Experience Design at Yahoo! and led the Design Innovation group doing Data Visualization. Joy had her own design consultancy, idbias, and before that was a senior project lead at Interval Research where she led a series of musical and eBook development projects. She headed the acclaimed Human Interface Group at Apple in the late '80s and '90s, and she began her career as a designer at Honeywell and a project leader for Visual Metaphors in the Interface Research Group at Microelectronics Computer Consortium (MCC). Joy presented widely and assembled the team who wrote the media-rich chapters in the seminal book, *The Art of Human Computer Interface Design*. She is on various boards across the design and interaction community, including as an elected board member of the International Design Conference in Aspen. She has also been an invited plenary speaker across the industry, including at CHI'94. Her focus areas have been interdisciplinary team management, data visualization, innovation, and advising corporations on the place of design, as a source of value and of delight. The International Design Expo which she created and continues to lead (with various corporate sponsors) has touched the lives of thousands of students for more than 20 years, and has created an amazing legacy that has helped grow the next generation of interdisciplinary graduates in design.

■ LIFETIME SERVICE AWARD

Mike Atwood

Mike Atwood is Professor and Associate Dean at the College of Information Science and Technology at Drexel University. Previously, he was a Technical Director at the NYNEX Science and Technology Center. He has a long record of service to SIGCHI and the CHI community, beginning with the Program Committee for the first Human Factors in Computer Systems Conference in Gaithersburg in 1982. He has held a range of conference positions since then for dozens of international conferences and workshops. He reviews for and serves on the boards of HCI journals. He served on the SIGCHI Executive Committee from 1993 to 2002, including four years as Chair.

Kevin Schofield

Kevin Schofield is General Manager for Strategy and Communications at Microsoft Research. His organization drives consensus on technical strategy and priorities for Microsoft's research efforts. He joined Microsoft in 1988, and has worked in Microsoft Research since 1997. Over the course of his tenure at Microsoft, he worked in both development and program management for a number of Microsoft product efforts, including networking, operating systems, MSN, and multimedia authoring tools. He has been involved with the Human-Computer Interaction (HCI) research field for a number of years. He previously served as Chair of ACM's Special Interest Group on Computer-Human Interaction (SIGCHI) and co-chair of the CHI'96 Conference on Human Factors in Computing Systems. He is the co-author of three issued patents and several pending ones.

■ SIGCHI SOCIAL IMPACT AWARD

This award is given to individuals who promote the application of human-computer interaction research to pressing social needs.

Bayta Friedman

Batya Friedman is a Professor in the Information School, Adjunct Professor in the Department of Computer Science, and Adjunct Professor in the Department of Human-Centered Design and Engineering at the University of Washington where she directs the Value Sensitive Design Research Lab. Batya pioneered value sensitive design (VSD), an approach to account for human values in the design of information systems. First developed in human-computer interaction, VSD has since been used in information management, human-robotic interaction, computer security, civil engineering, applied philosophy, and land use and transportation. Her work has focused on a wide range of values, some include privacy in public, trust, freedom from bias, moral agency, sustainability, safety, calmness, freedom of expression, and human dignity; along with a range of technologies such as web browsers, urban simulation, robotics, open source tools, mobile computing, implantable medical devices, computer security, ubiquitous computing and computing infrastructure. She is currently working on multi-lifespan information system design and on methods for envisioning – new ideas for leveraging information systems to shape our futures. Voices from the Rwanda Tribunal is an early project in this multi-lifespan information system design program.

■ PAST HONOREES

SIGCHI Lifetime Research Award

2011 Terry Winograd
2010 Lucy Suchman

SIGCHI Lifetime Practice Award

2011 Larry Tesler
2010 Karen Holtzblatt

SIGCHI Lifetime Achievement Award

2009 Sara Kiesler
2008 Bill Buxton
2007 James D. Foley
2006 Gary M. Olson, Judith S. Olson
2005 Tom Landauer
2004 Thomas P. Moran
2003 John M. Carroll
2002 Donald A. Norman
2001 Ben Shneiderman
2000 Stuart K. Card
1998 Douglas Engelbart

CHI Academy Members

Class of 2011 Ravin Balakrishnan, Steven Feiner, Joseph Konstan, James Landay, Jenny Preece, Abigail (Abi) Sellen, Dennis Wixon

Class of 2010 Susanne Bødker, Mary Czerwinski, Austin Henderson, David Kieras, Arnie Lund, Larry Tesler, Shumin Zhai

Class of 2009 Mark Ackerman, Bill Gaver, Clayton Lewis, Wendy E. Mackay, Aaron Marcus, Elizabeth Mynatt, Tom Rodden,

Class of 2008 Gregory Abowd, Paul Dourish, Wendy Kellogg, Randy Pausch, Mary Beth Rosson, Steve Whittaker

Class of 2007 Joëlle Coutaz, Karen Holtzblatt, Gerhard Fischer, Robert J. K. Jacob, Jun Rekimoto, Chris Schmandt

Class of 2006 Scott Hudson, Hiroshi Ishii, Michel Beaudouin-Lafon, Jakob Nielsen, Peter Pirolli, George Robertson

Class of 2005 Ron Baecker, Susan Dumais, John Gould, Saul Greenberg, Bonnie E. John, Andrew Monk

Class of 2004 George Furnas, Jonathan Grudin, Brad Myers, William Newman, Dan R. Olsen Jr., Brian Shackel, Terry Winograd

Class of 2003 Thomas Green, James D. Hollan, Robert E. Kraut, Gary M. Olson, Peter G. Polson

Class of 2002 William A. S. Buxton, John M. Carroll, Douglas C. Engelbart, Sara Kiesler, Thomas K. Landauer, Lucy A. Suchman

Class of 2001 Stuart K. Card, James D. Foley, Morten Kyng, Thomas P. Moran, Judith S. Olson, Ben Shneiderman

SIGCHI Social Impact Award

2011 Alan Newell, Clayton Lewis
2010 Allison Druin, Ben Bederson
2009 Helen Petrie
2008 Vicki Hanson
2007 Gregory Abowd, Gary Marsden
2006 Ted Henter
2005 Gregg Vanderheiden

SIGCHI Lifetime Service Award

2011 Arnie Lund, Jim Miller
2010 Mary Czerwinski
2009 Clare-Marie Karat, Steven Pemberton
2008 John Karat, Marian Williams
2007 Richard I. Anderson
2006 Susan M. Dray
2005 Sara Bly, John 'Scooter' Morris, Don Patterson, Gary Perlman, Marilyn Mantei Tremaine
2004 Robin Jeffries, Gene Lynch
2003 Lorraine Borman
2002 Dan R. Olsen Jr.
2001 Austin Henderson

■ SIGCHI BEST OF CHI AWARDS

The SIGCHI "Best of CHI" awards honor exceptional submissions to SIGCHI sponsored conferences. The CHI Papers and Notes committees nominate up to 5% of their submissions as Award Nominees. Separate awards committees then choose no more than 1% of the total submissions to receive a "Best" designation. A similar process was followed by the Case Studies Committee to nominate and select Case Studies for Best of CHI Awards. Congratulations to award winners and nominees for their outstanding contributions to CHI 2012 and to our field.

SIGCHI Best of CHI 2012 Committee

Susanne Bødker (Chair), *Aarhus University, Denmark*
Barry Brown, *University of California San Diego, USA*
Daniela Busse, *Samsung Research, USA*
Dan Cosley, *Cornell University, USA*
Michael Haller, *University of Applied Sciences Upper Austria*
Kasper Hornbæk, *University of Copenhagen, Denmark*
Karyn Moffatt, *McGill University, Canada*
Volkmar Pipek, *University of Siegen, Germany*
Andrew Wilson, *Microsoft, USA*
Peter Wright, *Newcastle University, UK*

■ CHI 2012 BEST PAPERS, AWARDED BY SIGCHI

Affordances in HCI: Toward a Mediated Action Perspective (Page 50)

Victor Kaptelinin, *University of Bergen, Norway*
 Bonnie Nardi, *University of California, Irvine, USA*

ClayVision: The (Elastic) Image of the City (Page 81)

Yuichiro Takeuchi, *Sony Computer Science Laboratories, Inc., Japan*
 Ken Perlin, *New York University, USA*

Communitysourcing: Engaging Local Crowds to Perform Expert Work Via Physical Kiosks (Page 62)

Kurtis Heimerl, Brian Gawalt, Kuang Chen, Tapan Parikh,
 Björn Hartmann, *University of California, Berkeley, USA*

Detecting Error-Related Negativity for Interaction Design (Page 36)

Chi Vi, Sriram Subramanian, *University of Bristol, UK*

Empathy, Participatory Design and People with Dementia (Page 37)

Stephen Lindsay, Katie Britain, Daniel Jackson, Cassim Ladha,
 Karim Ladha, Patrick Olivier, *Newcastle University, UK*

Improving Command Selection with CommandMaps (Page 31)

Joey Scarr, Andy Cockburn, *University of Canterbury, New Zealand*
 Carl Gutwin, *University of Saskatchewan, Canada*
 Andrea Bunt, *University of Manitoba, Canada*

Looking Glass: A Field Study on Noticing Interactivity of Shop Windows (Page 34)

Jörg Müller, Robert Walter, Gilles Bailly, Michael Nischt, *Technische Universität Berlin, Germany*
 Florian Alt, *University of Stuttgart, Germany*

Observational and Experimental Investigation of Typing Behaviour using Virtual Keyboards for Mobile Devices (Page 88)

Niels Henze, *University of Oldenburg, Germany*
 Enrico Rukzio, *University of Duisburg-Essen, Germany*
 Susanne Boll, *University of Oldenburg, Germany*

Personas and Decision Making in the Design Process: An Ethnographic Case Study (Page 54)

Erin Friess, *University of North Texas, USA*

Revisiting the Jacquard Loom: Threads of History and Current Patterns in HCI (Page 67)

Ylva Fernaeus, *Mobile Life Centre, Stockholm University, Sweden*
 Martin Jonsson, *Södertörn University, Sweden*
 Jakob Tholander, *Mobile Life Centre, Stockholm University, Sweden*

The Normal Natural Troubles of Driving with GPS (Page 69)

Barry Brown, *Mobile Life Centre, Stockholm University, Sweden*
 Eric Laurier, *University of Edinburgh, UK*

Touché: Enhancing Touch Interaction on Humans, Screens, Liquids, and Everyday Objects (Page 36)

Munehiko Sato, Ivan Poupyrev, Chris Harrison, *Disney Research, USA*

Uncomfortable Interactions (Page 77)

Steve Benford, Chris Greenhalgh, *University of Nottingham, UK*
 Gabriella Giannachi, *The University of Exeter*
 Brendan Walker, Joe Marshall, Tom Rodden, *University of Nottingham, UK*

Using Rhythmic Patterns as an Input Method (Page 53)

Emilien Ghomi, Guillaume Faure, Stephane Huot, Olivier Chapuis,
 Michel Beaudouin-Lafon, *Univ Paris-Sud, France*

■ CHI 2012 BEST NOTES, AWARDED BY SIGCHI

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Jonathan Back, Anna Cox, Duncan Brumby, *University College London, UK*

TeleAdvisor: A Versatile Augmented Reality Tool for Remote Assistance (Page 44)

Pavel Gurevich, *IBM Research - Haifa, Israel*
 Joel Lanir, *University of Haifa, Israel*
 Benjamin Cohen, *IBM Research, USA*
 Ran Stone, *IBM Research - Haifa, Israel*

■ CHI 2012 BEST CASE STUDIES, AWARDED BY SIGCHI

Vintage Radio Interface: Analog Control for Digital Collections (Page 73)

Mathieu Hopmann, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*
 Mario Gutierrez, Frédéric Vexo, *Logitech Incubator, Switzerland*
 Daniel Thalmann, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*

■ CHI 2012 HONORABLE MENTION PAPERS, AWARDED BY SIGCHI



"A Pace Not Dictated by Electrons": An Empirical Study of Work Without Email (Page 40)

Gloria Mark, Stephen Volda, *University of California, Irvine, USA*
Armand Cardello, *U.S. Army Natick RD&E Center, USA*

Activity-Based Interaction: Designing with Child Life Specialists in a Children's Hospital (Page 79)

Matthew Bonner, Lan Wang, Elizabeth Mynatt, *Georgia Tech, USA*

Analysis in Practical Usability Evaluation: A Survey Study (Page 78)

Asbjørn Følstad, *SINTEF, Norway*
Effie Law, *University of Leicester, UK*
Kasper Hornbæk, *University of Copenhagen, Denmark*

Appreciating plei-plei around Mobiles: Playfulness in Rah Island (Page 77)

Pedro Ferreira, Kristina Höök, *Mobile Life Centre, Stockholm University, Sweden*

Balancing Exertion Experiences (Page 74)

Florian Mueller, *RMIT University, Australia*
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Darren Edge, *Microsoft Research Asia, China*
Stefan Agamanolis, *Akron Children's Hospital, USA*
Jennifer Sheridan, *BigDog Interactive Ltd., UK*
Jeffrey Heer, *Stanford University, USA*

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Erin Solovey, *Massachusetts Institute of Technology, USA*
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Amy Volda, Ellie Harmon, Ban Al-Ani, *University of California, Irvine, USA*

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Bill Tomlinson, *University of California, Irvine, USA*
M. Six Silberman, *Bureau of Economic Interpretation, USA*
Donald Patterson, *University of California, Irvine, USA*
Yue Pan, Eli Blevis, *Indiana University, USA*

Designing Social Translucence Over Social Networks (Page 95)

Eric Gilbert, *Georgia Tech, USA*

Direct Answers for Search Queries in the Long Tail (Page 31)

Michael Bernstein, *Massachusetts Institute of Technology, USA*
Jaime Teevan, Susan Dumais, Daniel Liebling, Eric Horvitz, *Microsoft Research, UK*

Distributed Sensemaking: Improving Sensemaking by Leveraging the Efforts of Previous Users (Page 31)

Kristie Fisher, *Microsoft Research, USA*
Scott Counts, *Microsoft Research, UK*
Aniket Kittur, *Carnegie Mellon University, USA*

Envisioning Ubiquitous Computing (Page 67)

Stuart Reeves, *University of Nottingham, UK*

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 Edward Cutrell, *Microsoft Research India, India*

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 Gary Hsieh, *Michigan State University, USA*
 Scott Hudson, *Carnegie Mellon University, USA*

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Lorrie Cranor, *Carnegie Mellon, USA*

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Vinoba Vinayagamoorthy, Penelope Allen, Matt Hammond, Michael Evans, *British Broadcasting Corporation, UK*

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Frank Bentley, Santosh Basapur, *Motorola Mobility, USA*

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David Holstius, Edmund Seto, *University of California, Berkeley, USA*
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Michael Ritter, *Deep Springs International, Haiti*

■ SUNDAY | COURSES
Course 1A: Human-Computer Interaction: Introduction and Overview (14:00, Rm 14, 2 units)

Instructors:

Keith Butler, *University of Washington, USA*Robert Jacob, *Tufts University, USA*David Kieras, *University of Michigan, USA*

Gives newcomers background in the field of HCI to make their conference experience more meaningful. Provides a framework to understand how the various topics are related to research and practice.

Course 1B: Supporting Community with Social Media (17:30, Rm 14, 2 units)

Instructors:

John Carroll, *The Pennsylvania State University, USA*Cliff Lampe, *University of Michigan, USA*

Discusses how to support communities through information and communication technologies. Shows the various technical and social considerations in designing social computing systems to support community-scale interactions.

■ MONDAY | COURSES
Course 2: Evaluating Children's Interactive Products

(11:30, Rm 13A, 1 unit)

Instructors:

Janet Read, *University of Central Lancashire, UK*Panos Markopoulos, *University of Technology, Netherlands*

This course will introduce attendees to methods and tips for carrying out safe, effective and ethical evaluations with children. Practical tips and time saving instructions will be delivered.

Course 3: Global UX Strategies (11:30, Rm 14, 1 unit)

Instructors:

Tony Fernandes, *StudioUE, USA*

This entertaining session will provide attendees with an understanding of issues that negatively impact the usability and market viability of digital products that are intended for international or multilingual audiences.

Course 4: The Role of the UX Professional on an Agile Team (11:30, Rm 15, 1 unit)

Instructors:

Karen Holtzblatt, Hugh Beyer, *InContext Design, USA*

This course arms UX designers with techniques enabling them to participate in Agile projects, including how principles driving Agile can be used to support UX involvement.

Course 5 (Part 1 of 2): Art and HCI in Collaboration

(14:30, Rm 13B, 2 units—Second unit is taught on Tuesday)

Instructors:

David England, *LJMU, UK*Jill Fantauzzacoffin, *Georgia Tech, USA*Celine Latulipe, *University of North Carolina at Charlotte, USA*Thecla Schiphorst, *Simon Fraser University, Canada*

This course will enable participants to develop skills in planning and carrying out collaborative projects in the intersection of HCI and the digital arts.

Course 6: Introduction to Research and Design for Sustainability (11:30, Rm 11A, 2 units)

Instructors:

Daniela Busse, *Samsung Research, USA*Eli Blevis, *Indiana University*

This course will give an introduction to the domain of Sustainable HCI. We will both discuss existing findings and approaches as well as open questions and future research needs.

Course 7: Assessing Usability Capability Using ISO Standards (14:30, Rm 13A, 2 units)

Instructors:

Nigel Bevan, *Professional Usability Services, UK*

Learn how to assess usability maturity and identify areas where an organization needs to improve, either by using a workshop for process improvement, or a formal assessment of usability capability.

Course 8: Evidenced-Based Social Design of Online Communities (14:30, Rm 15, 2 units)

Instructors:

Robert Kraut, *Carnegie Mellon University, USA*Paul Resnick, *University of Michigan, USA*

To become successful, online communities must meet challenges, including starting up and encouraging contributions. This tutorial reviews social science theory and research on these topics and translates it into design recommendations.

Course 9: Practical Statistics for User Research Part I

(14:30, Rm 14, 2 units)

Instructors:

Jeff Sauro, *Oracle, USA*James Lewis, *IBM, USA*

Learn to generate confidence intervals and compare two designs using rating scale data, binary measures and task times for large and small sample sizes.

Course 10 (Part 1 of 2): Finding Your Way in Design Research (16:30, Rm 13B, 2 units—Second unit is taught on Tuesday)

Instructors:

Aaron Houssian, Pieter Jan Stappers, *Delft University of Technology, Netherlands*

Come and learn about design research by "prototyping" your current research program to see where it fits in the design research continuum. Helpful if you're new to the field/Students.

■ TUESDAY | COURSES

Course 5 (Part 2 of 2): Art and HCI in Collaboration
(09:30, Rm 11B)

Course 10 (Part 2 of 2): Finding Your Way in Design Research (16:30, Rm 13B)

Course 11: Agile UX: Bridging the Gulf through Experience and Reflection (09:30, Rm 13A, 2 units)

Instructors:

Jason Lee, *Meridium, Inc., USA*

Scott McCrickard, *Virginia Tech, USA*

This course will teach participants how user experience can work effectively within agile teams through a team-based design activity, group retrospectives and sharing of real-world experiences.

Course 12: Designing with and for Children in the 21st Century: Techniques and Practices (09:30, Rm 13B, 3 units)

Instructors:

Allison Druin, *University of Maryland, USA*

Jerry Fails, *Montclair State University, USA*

Mona Leigh Guha, *University of Maryland, USA*

This course will cover technology co-design methods involving children; covering history, practical techniques, roles of adults and children, and practical issues relating to an intergenerational design team.

Course 13: Designing with the Mind in Mind: The Psychological Basis for UI Design Rules (09:30, Rm 15, 2 units)

Instructors:

Jeff Johnson, *UI Wizards*

Explains the perceptual and cognitive psychology behind interaction design principles and guidelines. Provides powerful examples of how human perception and cognition work (and don't work).

Course 14: Inspiring Mobile Interaction Design (09:30, Rm 14, 2 units)

Instructors:

Matt Jones, *Swansea University, UK*

Gary Marsden, *University of Cape Town, South Africa*

The course will introduce empowering mobile design philosophies, principles and methods as well as giving specific guidance on key consumer application areas such as pedestrian navigation and social-local aware services.

Course 15: User Experience Evaluation in Entertainment and Games (09:30, Rm 11A, 2 units)

Instructors:

Regina Bernhaupt, *IRIT - ICS, France*

This course comprehensively covers important user experience (UX) evaluation methods methods, opportunities and challenges of UX evaluation in the area of entertainment and games.

Course 16: Innovating from Field Data: Driving the Voice of the Customer Into Solutions that Transform Lives (14:30, Rm 15, 1 unit)

Instructors:

Karen Holtzblatt, Larry Marturano, *InContext Design, USA*

This course teaches how the best ideas are produced when the inner "design compass" is educated by customer data. Participants interact with customer data and use it to generating ideas.

Course 17: Practical Statistics for User Research Part II (14:30, Rm 11A, 2 units)

Instructors:

Jeff Sauro, *Oracle, USA*

James Lewis, *IBM, USA*

Learn how to: compute sample sizes for user research studies (comparing designs, finding usability problems and surveys); determine if a benchmark was exceeded; and practice conducting and interpreting statistical tests.

Course 18: Social Interaction Design for Online Video and Television (14:30, Rm 13A, 2 units)

Instructors:

David Geerts, *KU Leuven, Belgium*

Pablo Cesar, *CWI, Netherlands*

Will teach you how to analyze, design and evaluate social interaction for online video and television, giving practical tools, techniques and guidelines to apply directly in your own work.

Course 19: User Experience Evaluation Methods: Which Method to Choose? (14:30, Rm 14, 2 units)

Instructors:

Virpi Roto, *Aalto University, Finland*

Arnold Vermeeren, *Delft University of Technology, Netherlands*

Kaisa Väänänen-Vainio-Mattila, *Tampere University of Technology, Finland*

Effie Lai-Chong Law, *University of Leicester, UK*

Marianna Obrist, *Newcastle University, UK*

Helps to select the right user experience evaluation methods for different purposes. A collection of methods that investigate how people feel about the system under study is provided at www.allaboutux.org.

Course 21: User Interface Design and Adaptation for Multi-Device Environments (16:30, Rm 15, 1 unit)

Instructors:

Fabio Paternò, *CNR-ISTI, Italy*

This tutorial aims to help user interface designers and developers to understand the issues involved in multi-device interactive applications accessed through mobile and stationary devices even exploiting different interaction modalities

WEDNESDAY | COURSES
Course 22: Advanced Research & Design for Sustainability (09:30, Rm 13B, 2 units)

Instructors:

Daniela Busse, *Samsung Research, USA*Eli Blevis, *Indiana University*

This course will provide an advanced treatment of the domain of Sustainable HCI. Prior knowledge of the field is required, or attendance of the related CHI course 'Introduction to ... Sustainability'.

Course 23: Agile UX Toolkit (09:30, Rm 14, 2 units)

Instructors:

Desiree Sy, John Schrag, *Autodesk Canada, Canada*

Skills and tactics for experienced UX practitioners and managers to successfully adapt user-centered design practices to integrate into an agile team.

Course 24: Choice and Decision Making for HCI (09:30, Rm 13A, 2 units)

Instructors:

Anthony Jameson, *German Research Institute for Artificial Intelligence (DFKI), Germany*

Find out how users of your systems make choices and decisions - and how you can help them make better ones.

Course 25: Designing What to Design: a Task-Focused Conceptual Model (09:30, Rm 15, 2 units)

Instructors:

Jeff Johnson, *UI Wizards*

Designing a conceptual model is an important early step in interaction design. Unfortunately, it is often skipped, resulting in incoherent, overly-complex applications. This course explains how to design conceptual models, and why.

Course 26: Interaction Design for Social Development (09:30, Rm 11A, 2 units)

Instructors:

Gary Marsden, *University of Cape Town, South Africa*Matt Jones, *Swansea University, UK*

The Interaction Design for Social Development is a course for those conducting, or wishing to conduct, interaction design research in the developing world.

Course 27: Card Sorting for Navigation Design (14:30, Rm 13A, 2 units)

Instructors:

William Hudson, *Syntagm Ltd, UK*

This half-day covers the theory and practice of card sorting. It includes hands-on experience of performing and analysing a paper-based card sort (online methods are also discussed).

Course 28: Empirical Research Methods for Human-Computer Interaction (14:30, Rm 14, 2 units)

Instructors:

Scott MacKenzie, Steven Castellucci, *York University, Canada*

This course delivers an A-to-Z tutorial on conducting an empirical experiment (aka user study) in human-computer interaction.

Course 29: Hands-Free Interfaces: The Myths, Challenges, and Opportunities of Speech-Based Interaction (14:30, Rm 15, 1 unit)

Instructors:

Cosmin Munteanu, *National Research Council Canada, Canada*Gerald Penn, *University of Toronto, Canada*

Learn how speech recognition works, what are its limitations and usability challenges, how it could be used to enhance interaction paradigms, and what is the current research and commercial state-of-the-art.

Course 30: Multimodal Detection of Affective States: A Roadmap from Brain-Computer Interfaces, Face-Based Emotion Recognition, Eye Tracking and Other Sensors (14:30, Rm 13B, 2 units)

Instructors:

Javier Gonzalez-Sanchez, Maria Elena Chavez-Echeagaray, Robert Atkinson, Winslow Burleson, Robert Christopherson, *Arizona State University, USA*

This course presents devices and explores methodologies for multimodal detection of affective states, as well as a discussion about presenter's experiences using them both in learning and gaming scenarios.

Course 31: Designing for 'Cool': Making Compelling Products and Applications (16:30, Rm 15, 1 unit)

Instructors:

Karen Holtzblatt, *InContext Design, USA*

This course presents a set of core attributes that make products and applications Cool, with illustrations from real products and services. We also at the challenges organizations face in creating Cool.

THURSDAY | COURSES
Course 32: Agile User Experience and UCD (09:30, Rm 15, 2 units)

Instructors:

William Hudson, *Syntagm Ltd, UK*

This course shows how to integrate User-Centred Design with Agile methods to create great user experiences. The course takes an emotionally intelligent approach to engaging team members in UCD.

Course 33: Cognitive Crash Dummies: Predicting Performance from Early Prototypes (09:30, Rm 13A, 2 units)

Instructors:

Bonnie John, *IBM Research, USA*

Presents a free tool that integrates rapid UI prototyping with predictive human performance modeling. Participants use their own laptop, learn to mock-up interactive systems, and create models of skilled performance.

Course 34: Designing for Persuasion (09:30, Rm 13B, 1 unit)

Instructors:

Aaron Marcus, *President, Aaron Marcus and Associates, Inc., USA*

The course presents four case studies about how to combine persuasion design with information design in mobile applications to change behavior regarding sustainability, health, wealth management, and story sharing.

Course 35: From Discourse-based Models to UIs Automatically Optimized for Your SmartPhone (09:30, Rm 14, 2 units)

Instructors:

Hermann Kaindl, *Vienna University of Technology, Austria*

Presents an approach to modeling discourses inspired by human-human communication. Explains how such models can be transformed automatically to user interfaces optimized for relatively small screens like those of current Smartphones.

Course 36: Methodology for Evaluating Experience of Mobile Applications Used in Different Contexts of Daily Life (11:30, Rm 13B, 2 units)

Instructors:

Katarzyna Wac, *University of Geneva, Switzerland*

Learn mixed-methods methodological approach to measurements-based evaluation of experience for mobile applications used "in the wild". Illustrated by a large-scale Android OS applications user study.

Course 37: Putting Conceptual Models to Work (14:30, Rm 15, 1 unit)

Instructors:

Austin Henderson, *Rivendel Consulting & Design, USA*

Explores and provides experience in building Conceptual Models by addressing both essential and optional issues in creating conceptual models that support users in getting their work done.

Course 38: Selecting UCD Methods that Maximize Benefits and Minimize Project Risks (14:30, Rm 14, 1 unit)

Instructors:

Nigel Bevan, *Professional Usability Services, UK*

Participants will learn how, with the support of an online tool, they can select user-centered methods that are most effective in reducing risk and maximizing cost benefits in a particular project.

■ SATURDAY & SUNDAY | PRECONFERENCE WORKSHOPS

W01 | Game User Research (Rm 11AB)

Magy Seif El-Nasr, *Northeastern University, USA*
 Heather Desurvire, *Behavioristics, Inc., USA*
 Lennart Nacke, *University of Ontario Institute of Technology, Canada*

Anders Drachen, *Aalborg University, Denmark*
 Licia Calvi, *NHTV University of Breda, Netherlands*
 Katherine Isbister, *NYU-Poly*
 Regina Bernhaupt, *IRIT, University Paul Sabatier, Toulouse III, France*

This workshop will be the first of its kind at CHI, specifically discussing methodologies in Game User Research - an emerging field focused on studying player' gaming experience.

W02 | Managing User Experience Teams: Lessons from Case Studies, and Establishing Best Practices (Rm 12B)

Janice Rohn, *Experian, USA*
 Dennis Wixon, *Microsoft Research, USA*

This workshop consists of a group of leaders who will create a set of management best practices to share with the CHI community.

W03 | CrowdCamp: Rapidly Iterating Ideas Related to Collective Intelligence & Crowdsourcing (Ballroom G)

Paul André, *Carnegie Mellon University, USA*
 Michael Bernstein, *Massachusetts Institute of Technology, USA*
 Mira Dontcheva, *Adobe Advanced Technology Labs*
 Elizabeth Gerber, *Northwestern University, USA*
 Aniket Kittur, *Carnegie Mellon University, USA*
 Rob Miller, *Massachusetts Institute of Technology, USA*

Hands-on workshop for the development of ideas, designs, and prototypes related to collective intelligence and crowdsourcing. Will enable diverse disciplines to rapidly test new ideas.

W05 | Educational Interfaces, Software, and Technology (Ballroom F)

Edward Tse, *SMART Technologies, Canada*
 Lynn Marentette, *Union County Public Schools, USA*
 Syed Ishtiaque Ahmed, *Cornell University, USA*
 Alexander Thayer, *University of Washington, USA*
 Jochen Huber, Max Mühlhäuser, *Technische Universität Darmstadt, Germany*

Si Jung Kim, *University of Central Florida, USA*
 Quincy Brown, *Bowie State University, USA*

We present a venue for the discussion of Educational Interfaces, Software, and Technologies.

■ SATURDAY | PRECONFERENCE WORKSHOPS

W06 | The 3rd Dimension of CHI (3DCHI): Touching and Designing 3D User Interfaces (Rm 14)

Frank Steinicke, *University of Würzburg, Germany*
 Hrvoje Benko, *Microsoft Research, UK*
 Antonio Krueger, *DFKI GmbH, Germany*
 Daniel Keefe, *University of Minnesota, USA*
 Jean-Baptiste de la Riviere, *Immersion SAS, France*
 Ken Anderson, *Intel Corporation, USA*
 Jonna Häkkinä, *Nokia Research Center, Finland*
 Leena Arhippainen, *Minna Pakanen, Intel and Nokia Joint Innovation Center, Finland*

We address the research and industrial challenges involved in exploring the space where the flat digital world of surface computing meets the physical, spatial 3D space in which we live.

W07 | Emerging Technologies for Healthcare and Aging (Rm 18A)

Tracy Mitzner, *Georgia Tech, USA*
 Marita O'Brien, *University of Alabama-Huntsville, USA*
 Wendy Rogers, *Georgia Tech, USA*

This workshop will address interaction issues relevant to emerging health technologies for older adults. Attendees will develop use cases that can inform healthcare technology developers during the formative evaluation stage.

W08 | HCI for Peace: Preventing, De-Escalating and Recovering from Conflict (Rm 17A)

Juan Pablo Hourcade, *University of Iowa, USA*
 Natasha Bullock-Rest, *Brown University, USA*
 Janet Davis, *Grinnell College, USA*
 Lahiru Jayatilaka, Neema Moraveji, *Stanford University, USA*
 Lisa Nathan, *University of British Columbia, Canada*
 Panayiotis Zaphiris, *Cyprus University of Technology, Cyprus*

An opportunity for a focused and extended set of presentations and discussions on the use of interactive technologies for preventing, de-escalating and recovering from conflict.

W09 | A Contextualised Curriculum for HCI (Rm 16B)

Sally Fincher, *University of Kent, UK*
 Paul Cairns, *University of York, UK*
 Alan Blackwell, *University of Cambridge, UK*

This workshop will center on a detailed examination of situated HCI teaching practices, providing contextualization of HCI curriculum topics.

W10 | Defamiliarization in Innovation and Usability (Rm 13B)

Charline Poirier, Calum Pringle, *Canonical, UK*

With innovation, designers need to ask how they can offer a non-disruptive and enjoyable user experience whilst at the same time not meeting users' expectations. Can defamiliarization assist here?

W11 | Visual Thinking & Digital Imagery (Rm 19A)

Eli Blevis, *Indiana University, USA*
Elizabeth Churchill, *Yahoo! Research, USA*
William Odom, James Pierce, *Carnegie Mellon University, USA*
David Roedl, *Indiana University, USA*
Ron Wakkary, *Simon Fraser University, Canada*

This workshop focuses on exploring the centrality of visual literacy and visual thinking to HCI, foregrounding the notion that imagery is a primary form of visual thinking.

W12 | 2nd Workshop on Distributed User Interfaces: Collaboration and Usability (Rm 16A)

Ricardo Tesoriero, *University of Castilla-La Mancha, Spain*
María Lozano, *University of Castilla-La Mancha (UCLM), Spain*
Jean Vanderdonckt, *Louvain School of Management, Belgium*
Jose A. Gallud, Victor M. R. Penichet, *University of Castilla-La Mancha, Spain*

Attendees to the workshop will have a deeper insight to the topic of Distributed User Interfaces and the main benefits of using this kind of interactive environments.

W13 | Bridging Clinical and Non-clinical Health Practices: opportunities and challenges (Rm 19B)

Yunan Chen, *University of California, Irvine, USA*
Charlotte Tang, *University of British Columbia, Canada*
Karen Cheng, Sun Young Park, *University of California, Irvine, USA*

Building on the illness trajectory concept, this workshop aims to explore the interplay between, and the challenges and opportunities in designing healthcare technologies for bridging clinical and non-clinical settings.

W14 | Theories, Methods and Case Studies of Longitudinal HCI Research (Rm 18B)

Evangelos Karapanos, *Madeira Interactive Technologies Institute, Portugal*
Jhilmil Jain, *Google, USA*
Marc Hassenzahl, *Folkwang University of Arts, Germany*

The interest in longitudinal studies of users' experiences and behaviors with interactive products is mounting, while recent methodological advances have enabled new ways to elicit as well as process longitudinal data. With this workshop we want to establish a forum for the exchange of knowledge and discussion on novel theories, methods and experiences gained through case studies of longitudinal HCI research. This is an effort towards the collection of best practices for an edited book publication.

W15 | I Just Love this Product! Looking into Wow Products, from Analysis to Heuristics (Rm 18C)

Jettie Hoonhout, Bernt Meerbeek, *Philips Research, Netherlands*
Elizabeth Buie, *Luminanze Consulting, LLC, USA*

We all recognize cool products on the shelf; making these from scratch is quite another thing. Through analyzing successful products, we aim to derive heuristics for design of "cool" products.

W16 | Methods to Account for Values in Human-Centered Computing (Rm 13A)

Christian Detweiler, Alina Pommeranz, *Delft University of Technology, Netherlands*
Luke Stark, *New York University, USA*

Describes a workshop on developing methodological frameworks for values in human-centered computing, and putting these methods into practice. Can help designers, users and other stakeholders account for values in design.

W17 | Technology for Today's Family (Rm 18D)

Jerry Fails, *Montclair State University, USA*
Mona Leigh Guha, *University of Maryland, USA*
Michael Horn, *Northwestern University, USA*
Sara Isola, *Montclair State University, USA*

This workshop will host researchers and practitioners for a one-day workshop to promote a community focused on addressing the needs of families by designing and developing family-centric interactive technologies.

W18 | Ar-CHI-ecture: Architecture and Interaction (Rm 15)

Nicholas Dalton, *The Open University, UK*
Keith Green, *Clemson University, USA*
Paul Marshall, *University of Warwick, UK*
Ruth Dalton, *Northumbria University, UK*
Christoph Hoelscher, *University of Freiburg, Germany*
Anijo Mathew, *Illinois Institute of Technology (IIT), USA*
Gerd Kortuem, *The Open University, UK*
Tasos Varoudis, *University College London, UK*

The rise of ubiquitous computing leads to a convergence between architectural design and HCI. This workshop brings digital interaction and the build environment together to map future research and collaboration.

W19 | Designing and Evaluating Text Entry Methods (Rm 17B)

Per Ola Kristensson, *University of St Andrews, UK*
James Clawson, *Georgia Tech, USA*
Mark Dunlop, *University of Strathclyde, UK*
Poika Isokoski, *University of Tampere, Finland*
Brian Roark, *Oregon Health & Science University, USA*
Keith Vertanen, *Montana Tech of The University of Montana, USA*
Annalu Waller, *University of Dundee, UK*
Jacob Wobbrock, *University of Washington, USA*

This workshop serves to unify the text entry community and center it at CHI.

W33 | Qualitative Research in HCI (Rm 12A)

Jennifer Rode, *Drexel University, USA*
Mark Blythe, *Northumbria University, UK*
Bonnie Nardi, *University of California, Irvine, USA*

For academics in HCI who practice qualitative evaluation and want to understand the use of participatory practices in ethnography; share experiences doing fieldwork.

■ SUNDAY | PRECONFERENCE WORKSHOPS

W20 | Theories behind UX Research and How They Are Used in Practice (Rm 18A)

Marianna Obrist, *Newcastle University, UK*
 Virpi Roto, *Aalto University, Finland*
 Effie Lai-Chong Law, *University of Leicester, UK*
 Kaisa Väänänen-Vainio-Mattila, *Tampere University of Technology, Finland*
 Arnold Vermeeren, *Delft University of Technology, Netherlands*
 Elizabeth Buie, *Luminanze Consulting, LLC, USA*

A major contribution of the workshop will be to clarify the applicability and transferability of different theories, theoretical concepts in informing UX design and evaluation in both research and practice.

W21 | End-user interactions with intelligent and autonomous systems (Rm 16B)

Simone Stumpf, *City University London, UK*
 Margaret Burnett, *Oregon State University, USA*
 Volkmar Pipek, *University of Siegen, Germany*
 Weng-Keen Wong, *Oregon State University, USA*

Facilitate the exchange of approaches, solutions, and ideas about how to better support end users' interactions with intelligent and autonomous systems between academic and industrial researchers.

W22 | Memento Mori: Technology Design for the End of Life (Rm 17A)

Michael Massimi, *University of Toronto, Canada*
 Wendy Moncur, *University of Dundee, UK*
 William Odom, *Carnegie Mellon University, USA*
 Richard Banks, *Microsoft Research, UK*
 David Kirk, *Newcastle University, UK*

Addresses end of life issues and technology use, with a focus on the design and development of systems that engage with death, dying, mortality, and bereavement.

W23 | Identity, Performativity, and HCI (Rm 15)

Gopinaath Kannabiran, *Indiana University, USA*
 Ann Light, *Northumbria University, UK*
 Tuck Leong, *Newcastle University, UK*

This workshop is aimed to provide a platform to explore and engage with issues of identity within the realm of experience design in HCI through the lens of performativity.

W24 | Food and Interaction Design: Designing for Food in Everyday Life (Rm 18B)

Rob Comber, *Newcastle University, UK*
 Eva Ganglbauer, *Vienna University of Technology, Austria*
 Jaz Hee-jeong Choi, *Queensland University of Technology, Australia*
 Jettie Hoonhout, *Philips Research, Netherlands*
 Yvonne Rogers, *University College London, UK*
 Kenton O'Hara, *Microsoft Research, UK*
 Julie Maitland, *National Research Council Canada, Canada*

Brings together researchers and practitioners in the emerging field of human-food-interaction. Develops a design space at the interstices of food, health, sustainability and alternative food cultures.

W25 | Exploring HCI's Relationship with Liveness (Rm 16A)

Jonathan Hook, Guy Schofield, *Newcastle University, UK*
 Robyn Taylor, *University of Alberta, Canada*
 Tom Bartindale, *Newcastle University, UK*
 John McCarthy, *University College Cork, Ireland, Ireland*
 Peter Wright, *Newcastle University, UK*

This workshop aims to explore how HCI might contribute to the understanding of, and design response to, shifting values of liveness brought about by advances in digitally mediated performance.

W26 | Interaction Design and Emotional Wellbeing (Rm 19B)

David Coyle, *University of Bristol, UK*
 Conor Linehan, *University of Lincoln, UK*
 Karen Tang, *University of California, Irvine, USA*
 Siân Lindley, *Microsoft Research Cambridge, UK*

The workshop will consider the design of technology to support emotional wellbeing. It will provide a forum for discussion and set an agenda for future research in this area.

W27 | NUIs for New Worlds: New Interaction Forms and Interfaces for Mobile Applications in Developing Countries (Rm 13B)

Kasper Jensen, *Polytechnic of Namibia, Namibia*
 Gary Marsden, *University of Cape Town, South Africa*
 Edward Cutrell, *Microsoft Research India, India*
 Matt Jones, *Swansea University, UK*
 Ann Morrison, *Aalborg University, Denmark*

The aim of this workshop is to discuss the current (and near-future) technologies and create a research agenda for how we can design, implement and evaluate new and more natural interaction forms and interfaces for mobile devices. The ultimate goal is to lower the technical and literacy barriers and get relevant information, applications and services out to the next billion users.

W28 | Heritage Matters: Designing for Current and Future Values Through Digital and Social Technologies

(Rm 13A)

Elisa Giaccardi, *Universidad Carlos III de Madrid, Spain*

Elizabeth Churchill, *Yahoo! Research, USA*

Sophia Liu, *U.S. Geological Survey, Department of the Interior, USA*

Provides an expanded vocabulary to understand how people come to value and interact with digital traces and memories and participate over time in the social production of memory and identity.

W29 | From Materials to Materiality: Connecting Practice and Theory in HC (Rm 18D)

Daniela Rosner, *University of California, Berkeley, USA*

Jean-François Blanchette, *University of California, Los Angeles, USA*

Leah Buechley, *Massachusetts Institute of Technology, USA*

Paul Dourish, *University of California, Irvine, USA*

Melissa Mazmanian, *Department of Informatics, UC Irvine*

This workshop considers what HCI can learn from, and contribute to an engagement with material studies to enrich how HCI theorizes digital culture.

W30 | Cool aX Continents, Cultures and Communities

(Rm 18C)

Janet C Read, Daniel Fitton, *University of Central Lancashire, UK*

Linda Little, *Northumbria University, UK*

Matthew Horton, *University of Central Lancashire, UK*

This workshop aims to explore and discuss the notion of cool and how it crosses the boundaries of continents, cultures and communities.

W31 | Simple, Sustainable Living (Rm 19A)

Maria Håkansson, Gilly Leshed, *Cornell University, USA*

Eli Blevis, *Indiana University*

Lisa Nathan, *University of British Columbia, Canada*

Samuel Mann, *Otago Polytechnic, New Zealand*

Are complex lifestyles unsustainable? Do they contribute to environmental unsustainability? Should HCI design technologies that support simple living for human and environmental sustainability? This workshop discusses these questions.

W32 | Personal Informatics in Practice: Improving Quality of Life Through Data (Rm 17B)

Ian Li, *Carnegie Mellon University, USA*

Yevgeniy Medynskiy, *Georgia Tech, USA*

Jon Froehlich, *University of Maryland, College Park, USA*

Jakob Larsen, *Technical University of Denmark, Denmark*

Discusses themes relevant to personal informatics in practice, such as practical lessons from prior work in designing systems, requirements for building effective tools, and development of infrastructures.
























7 May 2012 | Monday

— = 10 minutes (Note, short Case Study)

— = 15 minutes (alt.chi)

— = 20 minutes (Paper, ToCHI, long Case Study)

	8:30-11:00	11:30-12:50	14:30-15:50	16:30-17:50
Ballroom D	Opening Plenary Margaret Gould Stewart Connecting the World through Video	CHI Madness	Invited Talk Richard Shusterman Somaesthetics and its Implications for CHI	Award Talk Joy Mountford Lifetime Practice Achievement Award
Ballroom E		Technical Presentations Curves and Mirages: Gestures and Interaction with Nonplanar Surfaces 	Technical Presentations Brain and Body  	Technical Presentations Hot Moves: Shape-changing and Thermal Interfaces
Ballroom F		Technical Presentations Leveraging the Crowd   	Panel Women in UX Leadership in Business	Invited Panel Creating Great User Experience: Facing the Challenges Ahead
Ballroom G		Technical Presentations Getting Around: Menus, Scrolling, and Advanced Navigation 	Technical Presentations Empathy and Technology: Focus on the End User  	Technical Presentations Intimacy and Connection
12AB		Technical Presentations AI & Machine-Learning & Translation 	alt.chi Reflections and Transgressions	alt.chi Physical Love
16AB		Technical Presentations Touch in Context 	Technical Presentations Text Visualization	Technical Presentations Interacting With Robots & Agents
17AB		Technical Presentations Teaching with New Interfaces	Technical Presentations Immateriality as a Design Feature	Technical Presentations Uses of Media & Creation of Web Experiences  
18AB		Technical Presentations Game Experiences  	Technical Presentations Privacy + Self Disclosure	Technical Presentations Tools for Video + Images 
18CD		Technical Presentations Eating + Cooking 	Technical Presentations Supporting Visually Impaired Users	Technical Presentations Sustainability and Behavior Change 
19AB		Technical Presentations Spectators 	Technical Presentations Workplace 	Technical Presentations HCI4D: Business 
11A		Course 6 Introduction to Research and Design... (See Page 19 for details)	Course 6 (continued)	Invited SIG Design Community Designing for the living room ...
11B		Invited SIG UX Community ... Improving Information Usability	Invited SIG Child-Computer Interaction Commun. Postcards and Conversations	SIG Games and Entertainment Community Shaping the Future
13A		Course 2 Evaluating Children's Interaction ... (See Page 19 for details)	Course 7 Assessing Usability Capability... (See Page 19 for details)	Course 7 (continued)
13B		SIG Management Community	Course 5 (part 1 of 2) Art and HCI in Collaboration... (See Page 19 for details)	Course 10 (part 1 of 2) Finding your way in Design Res... (See Page 19 for details)
14		Course 3 Global UX Strategies... (See Page 19 for details)	Course 9 Practical Statistics for User ... (See Page 19 for details)	Course 9 (continued)
15		Course 4 The Role of the UX Professiona... (See Page 19 for details)	Course 8 Evidenced-Based Social Design ... (See Page 19 for details)	Course 8 (continued)

Technical Presentations include Paper, Note, Case Study and ToCHI presentations

Exhibits	Interactivity	Special Events	Breaks
Commons (Exhibit Hall 4) 18:00-20:00	Permanent Collection Commons (Exhibit Hall 4) 18:00-20:00	Conference Reception & Exhibits Grand Opening Commons (Exhibit Hall 4) 18:00-20:00	Breaks served at 4th Floor Foyer today



■ OPENING PLENARY | BALLROOM D
8:30-10:15**CONNECTING THE WORLD THROUGH VIDEO****Margaret Gould Stewart**Director of User Experience, *YouTube, USA*

If every story and every storyteller is unique, how do you design a container to hold the most diverse set of faces and voices in human history? YouTube's Margaret Stewart, Director of User Experience, will discuss how the company approaches this inspiring challenge. Expect to learn about the YouTube experience from both filmmakers and viewers, the stories behind the videos and channels you love, and design principles you can apply to your work

About Margaret Gould Stewart

Margaret Gould Stewart manages the User Experience Team for YouTube, leading the company's overall design and user research efforts. Prior to her current role, she spent two years leading Search and Consumer Products UX at Google. Margaret has been a practitioner and manager in the field of User Experience for over 15 years. After graduating from New York University's Interactive Telecommunications Program (ITP) in 1995, Margaret consulted extensively with New York media companies such as the New York Times, Time-Warner, and Scholastic to develop many of their first forays into the web. She's held leadership roles at a variety of high profile start ups and companies, including Tripod.com and Angelfire.com, which were both acquired by Lycos, Inc.

Over the course of her career, Margaret has led the design teams for 5 top 10 most visited websites in the world. Margaret is a member of the board of Architecture for Humanity, and she has served on the jury for the Cooper-Hewitt National Design Awards. She is a frequent speaker about design, user experience, creative management, and the changing landscape of media. She lives in Palo Alto with her husband and three children.

CHI MADNESS | BALLROOM D**10:15-10:50****SESSION CHAIRS:**

Paul André, *Carnegie Mellon University*
 Petra Sundström, *Salzburg University*

CHI Madness returns to give everyone a lightning speed overview of the day's program.

MORNING BREAK | 4TH FLOOR FOYER**11:00-11:30**

CHI Madness is followed by a break from sessions. Refreshments are served in the 4th Floor Foyer.



■ INVITED TALK | BALLROOM D

SOMAESTHETICS AND ITS IMPLICATIONS FOR CHI

Richard Shusterman, *Florida Atlantic University, USA*

Somaesthetics is an interdisciplinary research product devoted to the critical study and meliorative cultivation of the experience and use of the living body (or soma) as site of sensory appreciation (aesthesia) and creative self-stylization. An ameliorative discipline of both theory and practice, somaesthetics seeks to enrich not only our discursive knowledge of the body but also our lived somatic experience and performance; it aims to improve the meaning, understanding, efficacy, and beauty of our movements and of the environments to which our actions contribute and from which they also derive their energies and significance. To pursue these aims, somaesthetics is concerned with a wide diversity of knowledge forms and discourses, social practices and institutions, cultural traditions, values, and bodily disciplines that structure (or could improve) such somatic understanding and cultivation. As an interdisciplinary project that is not confined to one dominant academic field, professional vocabulary, cultural ideology, or particular set of bodily disciplines, somaesthetics aims to provide an overarching theoretical structure and a set of basic and versatile conceptual tools to enable a more fruitful interaction and integration of the very diverse forms of somatic knowledge currently being practiced and pursued. My talk at CHI will present the fundamental principles of the somaesthetic, examine some of its interdisciplinary impact and then explore its possible applications to the field of interactive design.

About Richard Shusterman: Richard Shusterman is the Dorothy F. Schmidt Eminent Scholar in the Humanities at Florida Atlantic University, where he is also Professor of Philosophy and Director of the Center for Body, Mind, and Culture: <http://www.fau.edu/bodymindculture/>. His primary research focus is the field of somaesthetics, which evolved in the late nineties from his work in pragmatist philosophy and aesthetics. Author of *Body Consciousness: A Philosophy of Mindfulness and Somaesthetics* (Cambridge University Press, 2008), Shusterman has also written *Surface and Depth* (2002); *Performing Live* (2000); *Practicing Philosophy* (1997); *Sous l'interprétation* (1994), *Soma-esthétique et architecture: une alternative critique* (2010), and *Pragmatist Aesthetics* (1992, 2000, and translated into fourteen languages). Formerly chair of the Philosophy Department of Temple University (Philadelphia), he has held academic appointments in France, Germany, Israel, Italy, and Japan, and has been awarded research grants from the NEH, Fulbright, ACLS, Humboldt Foundation, and UNESCO. In 2008 the French government awarded him the rank of Chevalier in the Order of Academic Palms for his cultural contributions. His exploratory research in somaesthetics is informed by his professional practice as a somatic educator and therapist in the Feldenkrais Method.

■ TECHNICAL PRESENTATIONS | BALLROOM E

CURVES AND MIRAGES: GESTURES AND INTERACTION WITH NONPLANAR SURFACES

SESSION CHAIR: Per Ola Kristensson, *University of St Andrews, UK*

PAPER | LightGuide: Projected Visualizations for Hand Movement Guidance



Rajinder Sodhi, *University of Illinois at Urbana-Champaign, USA*
Hrvoje Benko, Andrew Wilson, *Microsoft Research, UK*

Describes a new approach to movement guidance, where visual hints are digitally projected on a user's hand. Can help users perform complex movements such as in exercise or playing an instrument.

PAPER | Understanding Flicking on Curved Surfaces

Simon Voelker, Christine Sutter, Lei Wang, Jan Borchers, *RWTH Aachen University, Germany*

This paper investigates flicking gestures on curved interactive surfaces. It provides a mathematical model to estimate the error users will make when flicking across a curve.

PAPER | MirageTable: Freehand Interaction on a Projected Augmented Reality Tabletop

Hrvoje Benko, *Microsoft Research, UK*
Ricardo Jota, *Inesc-ID*
Andrew Wilson, *Microsoft Research, UK*

MirageTable is a novel augmented reality system which enables instant digitization of physical objects, correct 3D perspective views, and interaction using bare hands without gloves or trackers.

NOTE | How Screen Transitions Influence Touch and Pointer Interaction Across Angled Display Arrangements

Fabian Hennecke, Wolfgang Matzke, Andreas Butz, *University of Munich, Germany*

User study investigating the effects of screen transitions on touch and pointer interaction across angled display arrangements. Can assist developers in understanding how to design novel interactive display arrangements.

NOTE | How Small Can You Go? Analyzing the Effect of Visual Angle in Pointing Tasks

Juan Pablo Hourcade, Natasha Bullock-Rest, *University of Iowa, USA*

Presents results of a study on pointing performance for targets occupying small visual angles. Suggests a steep performance degradation for targets occupying a visual angle below 3 minutes of arc.

■ TECHNICAL PRESENTATIONS | BALLROOM F
LEVERAGING THE CROWD

SESSION CHAIR: Andrea Forte, *Drexel University, USA*

PAPER | Human Computation Tasks with Global Constraints


Haoqi Zhang, *Harvard University, USA*
 Edith Law, *Carnegie Mellon University, USA*
 Rob Miller, *Massachusetts Institute of Technology, USA*
 Krzysztof Gajos, David Parkes, *Harvard University, USA*
 Eric Horvitz, *Microsoft Research, UK*

Describes a system for crowdsourcing itinerary planning called Mobi. Illustrates a novel crowdware concept for tackling complex tasks with global constraints by using a shared, collaborative workspace.

PAPER | Strategies for Crowdsourcing Social Data Analysis

Wesley Willett, *University of California, Berkeley, USA*
 Jeffrey Heer, *Stanford University, USA*
 Maneesh Agrawala, *University of California, Berkeley, USA*

Introduces a workflow in which data analysts enlist crowds to help explore data visualizations and generate hypotheses, and demonstrates seven strategies for eliciting high-quality explanations of data at scale.

PAPER | Direct Answers for Search Queries in the Long Tail


Michael Bernstein, *Massachusetts Institute of Technology, USA*
 Jaime Teevan, Susan Dumais, Daniel Liebling, Eric Horvitz, *Microsoft Research, UK*

We introduce Tail Answers: a large collection of crowdsourced search results that are unpopular individually but together address a large proportion of search traffic.

PAPER | Distributed Sensemaking: Improving Sensemaking by Leveraging the Efforts of Previous Users


Kristie Fisher, *Microsoft Research, USA*
 Scott Counts, *Microsoft Research, UK*
 Aniket Kittur, *Carnegie Mellon University, USA*

We show that ‘distributed sensemaking’ -sensemaking while leveraging the sensemaking efforts of previous users- enables schema transfer between users, leading to improved sensemaking quality and helpfulness.

■ TECHNICAL PRESENTATIONS | BALLROOM G
GETTING AROUND: MENUS, SCROLLING, AND ADVANCED NAVIGATION

SESSION CHAIR: Emmanuel Pietriga, *INRIA, France*

PAPER | Improving Command Selection with CommandMaps


Joey Scarr, Andy Cockburn, *University of Canterbury, New Zealand*
 Carl Gutwin, *University of Saskatchewan, Canada*
 Andrea Bunt, *University of Manitoba, Canada*

Introduces CommandMap interfaces for mouse-based command invocation. Theoretically and empirically demonstrates that their defining properties - spatially stable command locations and a flat command hierarchy - improve user performance.

PAPER | Improving Scrolling Devices with Document Length Dependent Gain

Andy Cockburn, Philip Quinn, *University of Canterbury, New Zealand*
 Carl Gutwin, *University of Saskatchewan, Canada*
 Stephen Fitchett, *University of Canterbury, New Zealand*

Describes a method for applying document-length-dependent gain to events reported by scrolling input devices such as scroll wheels. Empirically demonstrates the method’s benefits.

PAPER | Aural Browsing On-The-Go: Listening-based Back Navigation in Large Web Architectures


Tao Yang, Mexhid Ferati, Yikun Liu, Romisa Rohani Ghahari, Davide Bolchini, *Indiana University, USA*

Listening to a mobile site while on-the-go can be challenging. This paper introduces and evaluates topic- and list-based back, two strategies to enhance mobile navigation while aurally browsing the web.

PAPER | PolyZoom: Multiscale and Multifocus Exploration in 2D Visual Spaces

Waqas Javed, Sohaib Ghani, Niklas Elmquist, *Purdue University, USA*

We present PolyZoom, a navigation technique for 2D-multiscale visual spaces that allows users to build a hierarchy of focus regions, thereby maintaining awareness of multiple scales at the same time.

■ TECHNICAL PRESENTATIONS | 12AB
AI & MACHINE-LEARNING & TRANSLATION
SESSION CHAIR: Tessa Lau, *IBM Almaden Research Center, USA*
PAPER | Tell Me More? The Effects of Mental Model Soundness on Personalizing an Intelligent Agent 

Todd Kulesza, *Oregon State University, USA*
 Simone Stumpf, *City University London, UK*
 Margaret Burnett, Irwin Kwan, *Oregon State University, USA*

A user study exploring the effects of mental model soundness on end users personalizing an intelligent agent. Can help designers understand the impact of providing structural information about intelligent agents.

PAPER | Pay Attention! Designing Adaptive Agents that Monitor and Improve User Engagement

Daniel Szafir, Bilge Mutlu, *University of Wisconsin-Madison, USA*

Describes a novel technique to monitor and improve user attention in real-time using passive brain-computer interfaces and embodied agents. Will inform designers of adaptive interfaces, particularly for educational applications.

PAPER | ReGroup: Interactive Machine Learning for On-Demand Group Creation in Social Networks

Saleema Amershi, James Fogarty, Daniel Weld, *University of Washington, USA*

Presents ReGroup, a novel end-user interactive machine learning system for helping people create custom, on-demand groups in online social networks. Can facilitate in-context sharing, potentially encouraging better online privacy practices.

NOTE | An Automatically Generated Interlanguage Tailored to Speakers of Minority but Culturally Influenced Languages

Luis Leiva, Vicent Alabau, *Institut Tecnològic d'Informàtica, Spain*

Describes a technique to compensate for resource-scarce languages in machine translation. Can assist in developing UIs tailored to speakers of minority languages.

NOTE | "Then Click 'OK!'" Extracting References to Interface Elements in Online Documentation

Adam Fourney, Ben Lafreniere, Richard Mann, Michael Terry, *University of Waterloo, Canada*

This paper presents a recognizer for identifying references to user interface components in online documentation. We enumerate various challenges, and discuss how informal conventions in tutorial writing can be leveraged.

■ TECHNICAL PRESENTATIONS | 16AB
TOUCH IN CONTEXT
SESSION CHAIR: Eric Paulos, *Carnegie Mellon University, USA*
PAPER | Keep in Touch: Channel, Expectation and Experience 

Rongrong Wang, *Virginia Tech, USA*
 Francis Quek, Deborah Tatar, *Virginia Tech, USA*
 Keng Soon Teh, *National University of Singapore, Singapore*
 Adrian Cheok, *Keio University, Japan*

Describes a remote touch study, showing communicative touch accompanied by speech can significantly influence people's sense of connectedness. Identifies perception of communication intention as an important factor in touch communication design.

PAPER | TAP & PLAY: An End-User Toolkit for Authoring Interactive Pen and Paper Language Activities

Anne Marie Piper, Nadir Weibel, James Hollan, *University of California, San Diego, USA*

This paper presents a toolkit for authoring interactive multimodal language activities using a digital pen. We describe the system's development and a field deployment with over 70 users.

PAPER | At Home With Surface Computing

David Kirk, *Newcastle University, UK*
 Shahram Izadi, Otmar Hilliges, Richard Banks, Stuart Taylor, Abigail Sellen, *Microsoft Research, UK*

Presents findings from field study of novel tabletop system, including design guidelines.

PAPER | StoryCrate: Tabletop Storyboarding for Live Film Production

Tom Bartindale, *Newcastle University, UK*
 Alia Sheikh, *BBC Research & Development, UK*
 Nick Taylor, Peter Wright, Patrick Olivier, *Newcastle University, UK*

We describe a prototype tangible, tabletop interface deployed on a film shoot, which uses a storyboard as a shared data representation to drive team creativity.

■ TECHNICAL PRESENTATIONS | 17AB
TEACHING WITH NEW INTERFACES
SESSION CHAIR: Leila Takayama, *Willow Garage, USA*
PAPER | Oh Dear Stacy! Social Interaction, Elaboration, and Learning with Teachable Agents

 Amy Ogan, Samantha Finkelstein, Elijah Mayfield, *Carnegie Mellon University, USA*

 Claudia D'Adamo, *Wheaton College, USA*

 Noboru Matsuda, Justine Cassell, *Carnegie Mellon University, USA*

Results from a think-aloud study provide insight into interaction between student rapport and learning gains with a teachable agent. Contributions include theoretical perspectives and practical recommendations for implementing rapport-building agents.

CASE STUDY | Observational Study on Teaching Artifacts Created using Tablet PC

 Manoj Prasad, Tracy Hammond, *Texas A&M University, USA*

This is an observational study conducted on professors using tablet PC. We attempt to find a common structure in teaching contents by finding a general behavior pattern across three professors.

CASE STUDY | Employing Virtual Worlds for HCI Education: A Problem-Based Learning Approach

 Panagiotis Zaharias, *Open University of Cyprus, Cyprus*

 Marios Belk, George Samaras, *University of Cyprus, Cyprus*

This case study documents experiences from teaching an HCI course by employing 3D virtual worlds. Problem-based learning activities and interactive tools are presented along with key findings and educational implications.

PAPER | From Participatory to Contributory Simulations: Changing the Game in the Classroom

 Stefan Kreitmayer, *The Open University, UK*

 Yvonne Rogers, *University College London, UK*

 Robin Laney, Stephen Peake, *The Open University, UK*

Describes the design and evaluation of a flexible multi-player simulation game for classroom use. Can guide the design of co-located large-group learning applications.

■ TECHNICAL PRESENTATIONS | 18AB
GAME EXPERIENCES
SESSION CHAIR: Katherine Isbister, *NYU-Poly, USA*
PAPER | The Impact of Tutorials on Games of Varying Complexity

 Erik Andersen, Eleanor O'Rourke, Yun-En Liu, Rich Snider, Jeff Lowdermilk, David Truong, Seth Cooper, Zoran Popović, *University of Washington, USA*

Describes a multivariate study of tutorials in three video games with 45,000 players. Shows that tutorials may only have value for games with mechanics that cannot be discovered through experimentation.

PAPER | Tales from the Front Lines of a Large-Scale Serious Game Project

 Rilla Khaled, *IT University of Copenhagen, Denmark*

 Gordon Ingram, *University of Bath, UK*

Case study of an ongoing, large-scale interdisciplinary serious game project. Presents perspectives explaining the dynamics of serious game projects, highlighting under examined issues present in serious game design.

PAPER | Not Doing But Thinking: The Role Of Challenge In Immersive Videogames

 Anna Cox, *University College London, UK*

 Paul Cairns, *University of York, UK*

 Pari Shah, *University College London, UK*

 Michael Carroll, *University of York, UK*

Three experiments manipulate challenge of a video game. Demonstrate that the challenge experienced is an interaction between level of expertise of the gamer and cognitive challenge encompassed within the game.

PAPER | Understanding User Experience in Stereoscopic 3D Games

 Jonas Schild, *University of Duisburg-Essen, Germany*

 Joseph LaViola, *University of Central Florida, USA*

 Maic Masuch, *University of Duisburg-Essen, Germany*


Evaluates the impact of stereoscopic vision on user experience with digital games. Helps game designers to understand how different games and target groups can potentially benefit from stereoscopic vision.



■ TECHNICAL PRESENTATIONS | 18CD

EATING + COOKING

SESSION CHAIR: Wendy Ju, *California College of the Arts, USA*

PAPER | Health Promotion as Activism: Building Community Capacity to Effect Social Change 

Andrea Parker, *Georgia Tech, USA*
Vasudhara Kantroo, *Nokia R&D, USA*
Hee Rin Lee, *Indiana University, Bloomington, USA*
Miguel Osornio, Mansi Sharma, Rebecca Grinter, *Georgia Tech, USA*

Presents the design and evaluation of a tool that supports community-based health advocacy. Provides recommendations for HCI research focused on health inequalities and the ecological influences on behaviors and attitudes.

PAPER | Augmented Perception of Satiety: Controlling Food Consumption by Changing Apparent Size of Food with Augmented Reality

Takuji Narumi, Yuki Ban, Takashi Kajinami, *The University of Tokyo, Japan*
Tomohiro Tanikawa, *JST ERATO Igarashi Design Interface Project, Japan*
Michitaka Hirose, *The University of Tokyo, Japan*

The main contribution of this paper is to realize a method for modifying perception of satiety and controlling nutritional intake by changing the apparent size of food with augmented reality.

PAPER | Laying the Table for HCI: Uncovering Ecologies of Domestic Food Consumption

Annika Hupfeld, Tom Rodden, *University of Nottingham, UK*

Study of family eating practices in the home and the artefacts and spaces involved. Provides a set of sensitizing concepts for interaction designers and technologists seeking to augment domestic eating.

PAPER | panavi: Recipe Medium with a Sensors-Embedded Pan for Domestic Users to Master Professional Culinary Arts

Daisuke Uriu, Mizuki Namai, Satoru Tokuhisa, Ryo Kashiwagi, Masahiko Inami, Naohito Okude, *Keio University, Japan*

“panavi,” a recipe medium utilizing a sensors-embedded frying pan, supports cooking experience for domestic users to master professional culinary arts by managing temperature and pan movement properly.

■ TECHNICAL PRESENTATIONS | 19AB

SPECTATORS

SESSION CHAIR: Barry Brown, *University of California San Diego, USA*

PAPER | Looking Glass: A Field Study on Noticing Interactivity of Shop Windows 

Jörg Müller, Robert Walter, Gilles Bailly, Michael Nischt, *Technische Universität Berlin, Germany*
Florian Alt, *University of Stuttgart, Germany*

Presents a field study on how passers-by notice whether a public display is interactive. Can be useful to design public displays and shop windows that more effectively communicate interactivity to passers-by.

PAPER | Urban HCI: Spatial Aspects in the Design of Shared Encounters for Media Facades

Patrick Tobias Fischer, Eva Hornecker, *University of Strathclyde, UK*

We propose a terminology and a model for large-scale screens in urban environments. This model can help future designs for Media Facades to become more balanced and of greater social value.

PAPER | Chained Displays: Configurations of Public Displays can be used to influence Actor-, Audience-, and Passer-By Behavior

Maurice ten Koppel, Gilles Bailly, Jörg Müller, Robert Walter, *Technische Universität Berlin, Germany*

Describes a design space and a field study on interactive non-flat public displays. Examines how non-flat displays impact actor-, audience- and passer-by behavior.

ToCHI | Creating the Spectacle: Designing Interactional Trajectories Through Spectator Interfaces

Steve Benford, Andy Crabtree, Martin Flintham, Chris Greenhalgh, Boriana Koleva, *University of Nottingham, UK*
Matt Adams, Nicholas Tandavantij, Ju Row Far, *Blast Theory, UK*
Gabriella Giannachi, *The University of Exeter, UK*
Irma Lindt, *Fraunhofer FIT*

Ethnographic study reveals how artists designed and participants experienced a tabletop interface, shedding light on the design of tabletop and tangible interfaces, spectator interfaces, and trajectories through display ecologies

■ SPECIAL INTEREST GROUP (INVITED) | 11B**UX COMMUNITY: CURRENT ISSUES IN
ASSESSING AND IMPROVING INFORMATION
USABILITY****ORGANIZERS**

Stephanie Rosenbaum, *TecEd, Inc., USA*

Judith Ramey, *University of Washington, USA*

This SIG will help UX practitioners and educators create and/or research more effectively a wide variety of information, including user assistance, blogs, menus, onscreen messaging, and website content.

■ SPECIAL INTEREST GROUP | 13B**SPECIAL INTEREST GROUP FOR THE CHI 2012
MANAGEMENT COMMUNITY****ORGANIZERS**

Dennis Wixon, *Microsoft Research, USA*

Janice Rohn, *Experian, USA*

This SIG will serve two purposes: sharing the results from the two-day CHI workshop, and also as a forum for the management community to discuss topics of interest.



■ AWARD TALK | BALLROOM D

INNOVATION: WHEN IS EARLY TOO EARLY?

Joy Mountford, *Interaction Design Expo, USA*

Every company wants and needs to innovate to produce competitive products. This is particularly critical now in the US. Many of these prototype product ideas are quite good, but never see the light of day. At different times and within alternate companies they later become excellent products. There are many factors that contribute to good ideas apparently 'failing' to be released. Rarely are there papers or discussions held to dissect what factors led to their apparent rejection. Companies often repeat innovation mistakes, without benefitting from the hindsight from others. I will illustrate many media based products I have been involved with and were left on the shelf, only to come to life later. Although innovative enough, I will share the insights that probably led them not to come to market.

About Joy Mountford: Joy Mountford is currently a consultant to eBay on the future of ecommerce. Through her long career in human-computer interaction she has been an internationally recognized leader in the field. She has designed and led teams designing a wide variety of systems. She has led teams designing and developing a wide variety of computer systems. She was a VP of User Experience Design at Yahoo!, a VP of Digital User Experience and Design at Barnes and Noble and an Osher Fellow at the Exploratorium in San Francisco, CA. She was a senior project lead at Interval Research, and continues to consult to a variety of companies and to present innovative talks world-wide. She headed the acclaimed Human Interface Group at Apple in the late '80s and '90s; beginning her career as a designer at Honeywell and a project leader in the Interface Research Group at Microelectronics Computer Consortium (MCC). Her impact continues through the International Design Expo, which she created over 20 years ago to challenge the next generation of interdisciplinary graduates.

■ TECHNICAL PRESENTATIONS | BALLROOM E

BRAIN AND BODY

SESSION CHAIR: Eve Hoggan, *University of Helsinki, Finland*

PAPER | Touché: Enhancing Touch Interaction on Humans, Screens, Liquids, and Everyday Objects



Munehiko Sato, Ivan Poupyrev, Chris Harrison, *Disney Research, USA*

Touché uses a novel Swept Frequency Capacitive Sensing technique that can easily add rich touch and gesture sensitivity to a wide variety of objects, including the human body and water.

PAPER | Detecting Error-Related Negativity for Interaction Design



Chi Vi, Sriram Subramanian, *University of Bristol, UK*

Demonstrate the capabilities of an off-the-shelf headset in detecting Error Related Negativity on a single trial basis. Show that the detection accuracies are sufficient for use in real-time interactive applications.

PAPER | Implanted User Interfaces

Christian Holz, *Hasso Plattner Institute, Germany*
Tovi Grossman, George Fitzmaurice, *Autodesk Research, Canada*
Anne Agur, *University of Toronto, Canada*

We investigate the effect of skin on traditional components for sensing input, providing output, and for communicating, synchronizing and charging wirelessly.

NOTE | EEG Analysis of Implicit Human Visual Perception

Maryam Mustafa, Lea Lindemann, Marcus Magnor, *Technical University of Braunschweig, Germany*

Explores use of EEG as an implicit measure of video quality. Can be used to derive a new perception-based quality metric for use in image-based rendering and optimization of IBR techniques

NOTE | Development and Evaluation of Interactive System for Synchronizing Electric Taste and Visual Content

Hiromi Nakamura, Homei Miyashita, *Meiji University, Japan*

Describes apparatuses to add electric taste to food or drink and the latencies for electric taste and visual stimuli to develop an interactive system synchronizing those contents.

■ PANEL | BALLROOM F

WOMEN IN UX LEADERSHIP IN BUSINESS

PANELISTS

Janaki Kumar, Dan Rosenberg, *SAP Labs, USA*
Catherine Courage, *Citrix Systems, USA*
Janice Rohn, *Experian, USA*
Lisa Kamm, *Google Inc., USA*
Lisa Anderson, *Microsoft Research, USA*
Christine Holsberry, *Facebook, Inc, USA*
Apala Lahiri Chavan, *Human Factors International, India*

The goal of this panel is to launch a dialog on women in UX leadership in business. Our panelists of women leaders will share their insights with the UX community.

■ TECHNICAL PRESENTATIONS | BALLROOM G

EMPATHY AND TECHNOLOGY: FOCUS ON THE END USER

SESSION CHAIR: Jettie Hoonhout, *Philips Research Europe, Netherlands*

PAPER | Empathy, Participatory Design and People with Dementia

Stephen Lindsay, Katie Britain, Daniel Jackson, Cassim Ladha, Karim Ladha, Patrick Olivier, *Newcastle University, UK*

We present a participatory design approach for people with dementia focusing on their experiences by developing an empathic relationship with them illustrated through the design of a safe walking aid.

PAPER | From Death to Final Disposition: Roles of Technology in the Post-Mortem Interval

Wendy Moncur, Jan Bikker, *University of Dundee, UK*
Elaine Kasket, *London Metropolitan University, UK*
John Troyer, *University of Bath, UK*

Describes technology roles in collaborative processes, in the time from user death to final disposition. Provides insights into design for end of life and repurposing of data.

PAPER | On Saliency, Affect and Focused Attention

Lori McCay-Peet, *Dalhousie University, Canada*
Mounia Lalmas, Vidhya Navalpakkam, *Yahoo! Research, USA*

Study how saliency of relevant information impacts user engagement metrics, namely, focused attention and affect. Of interest to website owner, entertainment-oriented or other, interested in understanding user engagement.

NOTE | The Way I Talk to You: Sentiment Expression in an Organizational Context

Jiang Yang, Lada Adamic, Mark Ackerman, *University of Michigan, USA*
Zhen Wen, Ching-Yung Lin, *IBM T.J. Watson Research Center, USA*

Empirically identifies the relationships between sentiment expression and the four primary dimensions of social interactions in organizations: involvement, tie strength, network size, and performance.

CASE STUDY | Eustressed or Distressed? Combining Physiology with Observation in User Studies

Avinash Wesley, Peggy Lindner, Ioannis Pavlidis, *University of Houston, USA*

Case study presents method that enables quantification and disambiguation of emotional arousal states. Emotional analysis in human-centered computing can benefit from this method that efficiently combines quantitative and qualitative information.

■ ALT.CHI | 12AB

ALT.CHI: REFLECTIONS AND TRANSGRESSIONS

SESSION CHAIR: Daniela Rosner, *UC Berkeley, USA*

alt.chi | UCD: Critique via Parody and a Sequel

Gilbert Cockton, *Northumbria University, UK*

This alt.chi paper abandons technical writing conventions to parody user-centred design, and having predicted its imminent demise, more seriously derives a position (BIG design) on what could follow.

alt.chi | Massively Distributed Authorship of Academic Papers

Bill Tomlinson, Joel Ross, *University of California, Irvine, USA*
Paul André, *Carnegie Mellon University, USA*
Eric Baumer, *Cornell University, USA*
Donald Patterson, *University of California, Irvine, USA*
Joseph Corneli, *The Open University, UK*
Martin Mahaux, *University of Namur, Belgium*
Syavash Nobarany, *University of British Columbia, Canada*
Marco Lazzari, *University of Bergamo, Italy*
Birgit Penzenstadler, *Technische Universität München, Germany*
Andrew Torrance, *University of Kansas, USA*
David Callele, *TRLabs Saskatoon, Canada*
Gary Olson, *University of California, Irvine, USA*
Six Silberman, *Bureau of Economic Interpretation, USA*
Marcus Ständer, *Technische Universität Darmstadt, Germany*
Fabio Romancini Palamedi, *Methodist University, Brazil*
Albert Ali Salah, *Boğaziçi Üniversitesi, Turkey*
Eric Morrill, *University of California, Irvine, USA*
Xavier Franch, *Universitat Politècnica de Catalunya, Spain*
Florian 'Floyd' Mueller, *RMIT University, Australia*
Joseph 'Jofish' Kaye, *Nokia, USA*
Rebecca Black, Marisa Cohn, Patrick Shih, *University of California, Irvine, USA*
Johanna Brewer, *frēstyl, USA*
Nitesh Goyal, *Cornell University, USA*
Pirjo Näkki, *VTT Technical Research Centre of Finland, Finland*
Jeff Huang, *University of Washington, USA*
Nilufar Baghaei, *Unitec Institute of Technology, New Zealand*
Craig Saper, *UMBC, USA*

This work provides the first empirical evidence of the experiential aspects of large-scale collaborative research and writing using online tools, and reveals opportunities and complexities of this process.



alt.chi | What is the Object of Design?

Thomas Binder, *The Royal Danish Academy of Fine Arts, Denmark*

Giorgio De Michelis, *University of Milano - Bicocca, Italy*
Pelle Ehn, *Medea, Malmö University, Sweden*
Giulio Jacucci, *University of Helsinki, Finland*
Per Linde, *Medea, Malmö University, Sweden*
Ina Wagner, *Vienna University of Technology, Austria*

Proposes design as accessing, aligning, and navigating “constituents” of the object of design. People interact with the object of design through its constituents, combining creativity, participation and experience in drawing-things-together.

alt.chi | Designing Collaborative Media: A Challenge for CHI?

Jonas Löwgren, Bo Reimer, *Malmö University, Sweden*

A retrospective on 10+ years of experimentation with designing collaborative media. Implications for the CHI community are significant, in terms of design process as well as designer roles.

alt.chi | Ethics and Dilemmas of Online Ethnography

Jessica Lingel, *Rutgers University, USA*

Describes methodological issues related to online ethnography, particularly recruiting strategies and member checks.

■ TECHNICAL PRESENTATIONS | 16AB

TEXT VISUALIZATION

SESSION CHAIR: Jean-Daniel Fekete, *INRIA, France*

PAPER | Interpretation and Trust: Designing Model-Driven Visualizations for Text Analysis

Jason Chuang, Daniel Ramage, Christopher Manning, Jeffrey Heer, *Stanford University, USA*

Proposed criteria (interpretation and trust) to guide the design of model-driven visualizations. Contributed strategies (align, verify, modify, progressive disclosure) to aid designers in achieving interpretability and trustworthiness in visual analysis tools.

PAPER | V-Model: A New Innovative Model to Chronologically Visualize Narrative Clinical Texts

Heekyong Park, Jinwook Choi, *Seoul National University, Republic of Korea*

Proposes and verifies an innovative timeline model for narrative clinical events. Solves natural language representation problems, provides information for temporal reasoning, and is intuitive for understanding patient histories.

PAPER | JigsawMap: Connecting the Past to the Future by Mapping Historical Textual Cadasters

Hyungmin Lee, Sooyun Lee, *Seoul National University, Republic of Korea*

Namwook Kim, *Samsung Techwin, Republic of Korea*
Jinwook Seo, *Seoul National University, Republic of Korea*

We present an interactive visualization tool for visualizing and mapping historical textual cadasters. It can help historians understand the social/economic background of changes in land uses or ownership.

PAPER | Semantic Interaction for Visual Text Analytics

Alex Endert, Patrick Fiaux, Chris North, *Virginia Tech, USA*

Description of design space for user interaction for visual analytics called Semantic Interaction, coupling foraging and synthesis stages of sensemaking. The system, ForceSPIRE, supports users throughout sensemaking for text documents.

■ TECHNICAL PRESENTATIONS | 17AB

IMMATERIALITY AS A DESIGN FEATURE

SESSION CHAIR: Joonhwan Lee, *Seoul National University, Republic of Korea*

PAPER | Investigating the Presence, Form and Behavior of Virtual Possessions in the Context of a Teen Bedroom

William Odom, John Zimmerman, Jodi Forlizzi, Hajin Choi, Stephanie Meier, Angela Park, *Carnegie Mellon University, USA*

Presents and interprets findings from user enactments with teenagers investigating 4 design concepts that advance the form and behavior of virtual possessions.

PAPER | Technology Heirlooms? Considerations for Passing Down and Inheriting Digital Materials

William Odom, *Carnegie Mellon University, USA*
Richard Banks, *Microsoft Research, UK*
David Kirk, *Newcastle University, UK*
Richard Harper, *Microsoft Research, UK*
Siân Lindley, Abigail Sellen, *Microsoft Research Cambridge, UK*

Contributes new knowledge about the design of technologies to support (and potentially complicate) inheriting, living with and passing down treasured digital content among family members and across generations.

PAPER | Digitality and Materiality of New Media: Online TV Watching in China

Qi Wang, Xianghua Ding, Tun Lu, Ning Gu, *Fudan University, China*

Presenting an analysis of the use of traditional vs. new TV media in China, highlighting the interplay between digitality and materiality in shaping experiences. Contributes a better understanding of media phenomena.

PAPER | Writing the Experience of Information Retrieval: Digital Collection Design as a Form of Dialogue

Melanie Feinberg, *University of Texas at Austin, USA*

Describes a process in which designers “write” a resource collection as a form of rhetorical expression. Demonstrates the use of humanistic criticism as an element of collection design.

■ TECHNICAL PRESENTATIONS | 18AB
PRIVACY + SELF DISCLOSURE

SESSION CHAIR: Manfred Tscheligi, *University of Salzburg, Austria*

PAPER | The Mismeasurement of Privacy: Using Contextual Integrity to Reconsider Privacy in HCI

Louise Barkhuus, *Mobile Life, Stockholm University, Sweden*

The paper criticizes the ways in which privacy issues have been studied within HCI and ubicomp. It provides an analysis of privacy on the basis of contextual integrity.

PAPER | Tag, You Can See It! Using Tags for Access Control in Photo Sharing

Peter Klemperer, Yuan Liang, Michelle Mazurek, Manya Sleeper, Blase Ur, Lujo Bauer, *Carnegie Mellon University, USA*
 Lorrie Faith Cranor, *Carnegie Mellon, USA*
 Nitin Gupta, *Carnegie Mellon University, USA*
 Michael Reiter, *University of North Carolina, Chapel Hill, USA*

Lab study exploring whether intuitive access-control policies can be made from photo tags created for organizational and access-control purposes. Can increase understanding of user engagement with tag-based access control systems.

NOTE | Curation, Provocation, and Digital Identity: Risks and Motivations for Sharing Provocative Images Online

Rebecca Gulotta, Haakon Faste, Jennifer Mankoff, *Carnegie Mellon University, USA*

Investigates the phenomena of posting personal, revealing, and controversial images online. Provides recommendations for the development of systems that support these activities and directions for future work.

NOTE | The Implications of Offering More Disclosure Choices for Social Location Sharing

Karen Tang, *University of California, Irvine, USA*
 Jason Hong, Dan Siewiorek, *Carnegie Mellon University, USA*

Presents findings from a study that looks at how different types of disclosure options can influence users’ privacy preferences for location sharing. Can help in building better privacy configuration UIs.

PAPER | Interactivity as Self-Expression: A Field Experiment with Customization and Blogging

S. Shyam Sundar, Jeeyun Oh, Saraswathi Bellur, Haiyan Jia, Hyang-Sook Kim, *Pennsylvania State University, USA*

Describes an experiment with a portal site varying in functional customization, cosmetic customization and active vs. filter blogging. Provides user-centered guidelines for designing interactive tools that afford self-expression.

■ TECHNICAL PRESENTATIONS | 18CD
SUPPORTING VISUALLY IMPAIRED USERS

SESSION CHAIR: Vicki Hanson, *University of Dundee, UK*

PAPER | CrossingGuard: Exploring Information Content in Navigation Aids for the Visually Impaired

Richard Guy, Khai Truong, *University of Toronto, Canada*

User study to investigate the information needs of visually impaired pedestrians at intersections. We also present a system to gather the necessary information using Google’s Street View and Amazon’s Mechanical Turk.

PAPER | SpaceSense: Representing Geographical Information to Visually Impaired People Using Spatial Tactile Feedback

Koji Yatani, Nikola Banovic, Khai Truong, *University of Toronto, Canada*

Investigates a mobile interface that helps people with visual impairments learn directions to a location and its spatial relationships with other locations on a map through spatial tactile feedback.

PAPER | The User as a Sensor: Navigating Users with Visual Impairments in Indoor Spaces using Tactile Landmarks

Navid Fallah, Ilias Apostolopoulos, Kostas Bekris, Eelke Folmer, *University of Nevada, Reno, USA*

Describes an indoor navigation system that appropriates the user to be a sensor. The system can improve mobility for users with visual impairments and can be installed at low cost.

PAPER | Guidelines are Only Half of the Story: Accessibility Problems Encountered by Blind Users on the Web

Christopher Power, Andre Freire, Helen Petrie, David Swallow, *University of York, UK*

An empirical study of 1383 problems encountered on 16 websites by 32 blind users. These problems were analysed for whether they were covered by the Web Content Accessibility Guidelines version 2.0

■ TECHNICAL PRESENTATIONS | 19AB

WORKPLACE

SESSION CHAIR: Volkmar Pipek, *University of Siegen, Germany*

PAPER | “A Pace Not Dictated by Electrons”: An Empirical Study of Work Without Email



Gloria Mark, Stephen Volda, *University of California, Irvine, USA*
Armand Cardello, *U.S. Army Natick RD&E Center, USA*

Empirical study shows that when information workers’ email was cut off, they multitasked less and had lower stress. Results suggest how organizations can alleviate the burden of email on employees.

CASE STUDY | Designing Experiential Prototypes for the Future Workplace

Tong Sun, *Xerox Innovation Group, USA*
Nancy Doubleday, Adam Smith, *Rochester Institute of Technology, USA*

Case study describes a successful Xerox-sponsored open innovation project that generated innovative designs and prototypes for the future of the workplace with Rochester Institute of Technology (RIT).

NOTE | You’ve got video: Increasing clickthrough when sharing enterprise video with email

Mercan Topkara, *IBM T.J. Watson Research Center, USA*
Shimei Pan, *IBM Research, USA*
Jennifer Lai, *IBM, USA*
Ahmet Dirik, *Uludag University, Turkey*
Steven Wood, Jeff Boston, *IBM T.J. Watson Research Center, USA*

We summarize our research on increasing the information scent of video recordings that are shared via email in a corporate setting. We report on the results of two user studies.

CASE STUDY | Does the iPad add Value to Business Environments?

Steffen Hess, Jessica Jung, *Fraunhofer IESE, Germany*

Case study describing benefits and drawbacks of iPad usage in a business environment. Can assist companies in understanding how they can benefit from the use of mobile tablets.

PAPER | Impression Formation in Corporate People Tagging

Daphne Raban, Avinoam Danan, *University of Haifa, Israel*
Inbal Ronen, Ido Guy, *IBM Research, USA*

People tagging offers unique insight about self-presentation and concurrently the perception by others based on explicit data in the form of tags in an organizational environment. Findings suggest design implications.

■ SPECIAL INTEREST GROUP | 11B

INVITED: CHILD COMPUTER INTERACTION SIG - POSTCARDS AND CONVERSATIONS

ORGANIZERS

Janet C. Read, *University of Central Lancashire, UK*
Panos Markopoulos, *Eindhoven University of Technology, Netherlands*
Allison Druin, *University of Maryland, USA*

The networking event for the Child Computer Interaction community, especially designed to welcome new comers in the field, and to allow lots of informal and personal interaction.

■ PANEL | BALLROOM D

THE ARTS, HCI, AND INNOVATION POLICY DISCOURSE (INVITED PANEL)

PANELISTS

Jill Fantauzzacoffin, *Georgia Tech, USA*
 Joanna Berzowska, *Concordia University, Canada*
 Ernest Edmonds, *De Montfort University, UK*
 Ken Goldberg, *University of California, Berkeley, USA*
 D. Fox Harrell, *Massachusetts Institute of Technology, USA*
 Brian Smith, *Rhode Island School of Design, USA*

This panel relates issues in HCI/arts to innovation policy discourse in order to bring a fresh perspective to the STEM/arts divide in HCI.

■ TECHNICAL PRESENTATIONS | BALLROOM E

HOT MOVES: SHAPE-CHANGING AND THERMAL INTERFACES

SESSION CHAIR: Lars Erik Holmquist, *Yahoo!*

PAPER | “Baby It’s Cold Outside”: The Influence of Ambient Temperature and Humidity on Thermal Feedback

Martin Halvey, Graham Wilson, Stephen Brewster, *University of Glasgow, UK*
 Stephen Hughes, *SAMH Engineering, Ireland*

We investigate the impact of ambient temperature and humidity on the use of thermal interfaces. The outcome of our evaluations are a set of design recommendations.

PAPER | PINOKY: A Ring That Animates Your Plush Toys

Yuta Sugiura, Calista Lee, Masayasu Ogata, Anusha Withana, Yasutoshi Makino, *Keio University, Japan*
 Daisuke Sakamoto, *JST ERATO Igarashi Design Interface Project, Japan*

Masahiko Inami, *Keio University, Japan*
 Takeo Igarashi, *JST ERATO Igarashi Design Interface Project, Japan*

PINOKY is a wireless ring-like device that can be externally attached to any plush toy as an accessory that animates the toy by moving its limbs.

PAPER | Shape-Changing Interfaces: A Review of the Design Space and Open Research Questions

Majken Rasmussen, *Aarhus School of Architecture, Denmark*
 Esben Pedersen, *University of Copenhagen, Denmark*
 Marianne Petersen, *University of Aarhus, Denmark*
 Kasper Hornbæk, *University of Copenhagen, Denmark*

Reviews work on physical interfaces that use shape change as input or output, so-called shape-changing interfaces. Provide an overview of the design space of such interfaces and identify open research questions.

NOTE | MimicTile: A Variable Stiffness Deformable User Interface for Mobile Devices

Yusuke Nakagawa, *JST ERATO Igarashi Design Interface Project, Japan*
 Akiya Kamimura, *National Institute of Advanced Industrial Science and Technology, Japan*
 Yoichiro Kawaguchi, *JST ERATO Igarashi Design Interface Project, Japan*

Describes a user interface that can recognize deformation-based gestures and provide haptic feedback. Presents engineers and researchers with the methods to control SMAs and to recognize gestures.

NOTE | Animating Paper Using Shape Memory Alloys

Jie Qi, Leah Buechley, *Massachusetts Institute of Technology, USA*

Presents mechanisms and design guidelines for using shape memory alloys to actuate paper. We believe that blending paper with electronics is promising for engaging diverse audiences in building electronics.

■ PANEL | BALLROOM F

INVITED PANEL: CREATING GREAT USER EXPERIENCE: FACING THE CHALLENGES AHEAD

PANELISTS

Joseph Konstan, *University of Minnesota, USA*
 Aaron Marcus, *President, Aaron Marcus and Associates, Inc., USA*
 Karen Holtzblatt, *InContext Enterprises, USA*
 Eric Schaffer, *Human Factors International, India*

This panel provides practicing user experience professionals a chance to ask questions to and hear from a diverse set of leading user experience consultants.

■ TECHNICAL PRESENTATIONS | BALLROOM G

INTIMACY AND CONNECTION

SESSION CHAIR: Mary Czerwinski, *Microsoft Research, USA*

PAPER | Intimacy in Long-Distance Relationships over Video Chat

Carman Neustaedter, *Simon Fraser University, Canada*
 Saul Greenberg, *University of Calgary, Canada*

Describes an interview study of how couples in long distance relationships use video chat systems for shared living and intimacy over distance. Provides suggestions for future video chat system design.



NOTE | How Do Couples Use CheekTouch over Phone Calls?

Young-Woo Park, Seok-Hyung Bae, Tek-Jin Nam, *Korea Advanced Institute of Science and Technology, Republic of Korea*

Describes how romantic couples use a novel audio-tactile communication technique called CheekTouch over phone calls. Shows a possibility of enriching emotions with touch over phone calls.

NOTE | The Spread of Emotion via Facebook

Adam D. I. Kramer, *Facebook, Inc, USA*

Correlational study showing that emotions (defined as posts with emotional words) spread through Facebook. Also addresses two confounds in the Emotional Contagion literature.

PAPER | It's Complicated: How Romantic Partners Use Facebook

Xuan Zhao, *Cornell, USA*
Victoria Schwanda Sosik, Dan Cosley, *Cornell University, USA*

A qualitative study exploring how romantic partners make Facebook-related decisions and how Facebook's affordances support them. Provides examples/ideas for thinking about designs and theorizing about ways people manage privacy and relationships.

PAPER | Lost in Translation: Understanding the Possession of Digital Things in the Cloud

William Odom, *Carnegie Mellon University, USA*
Abi Sellen, *Microsoft Research Cambridge, UK*
Richard Harper, Eno Thereska, *Microsoft Research, UK*

Presents and interprets field evidence related to people's perceptions of personal digital things kept in Cloud Computing environments. Findings are interpreted to detail design and research opportunities.

■ ALT.CHI | 12AB

ALT.CHI: PHYSICAL LOVE

SESSION CHAIR: Jofish Kaye, *Nokia Research Center, USA*

alt.chi | I Just Made Love: The System and the Subject of Experience

Gopinaath Kannabiran, Jeffrey Bardzell, Shaowen Bardzell, *Indiana University, USA*

In this work, we propose a new paradigm to understand experience design by focusing on the subject of interaction as opposed to the existing paradigm which is the user.

alt.chi | "It's in Love with You" - Communicating Status and Preference with Simple Product Movements

Ditte Hvas Mortensen, Sam Hepworth, *Bang & Olufsen, Denmark*
Kirstine Berg, Marianne Graves Petersen, *Aarhus University, Denmark*

A study where users perceive a product with adaptive movements as expressing agency and it becomes part of their social context. Can assist design and understanding of automated product interaction.

alt.chi | Black-boxing the User: Internet Protocol over Xylophone Players (IPoXP)

R. Stuart Geiger, Yoon Jung Jeong, Emily Manders, *University of California, Berkeley, USA*

Internet Protocol over Xylophone Players inverts the traditional mode of human-computer interaction and problematizes the user/interface distinction, raising a number of conceptual issues.

alt.chi | Design for X?: Distribution Choices and Ethical Design

Elizabeth Goodman, *University of California, Berkeley, USA*
Janet Vertesi, *Princeton University, USA*

Sex-oriented technologies at an adult trade show prompt the authors to reframe "values in design" as a question of the choice of distribution of agency among users and designers.

alt.chi | The Machine in the Ghost: Augmenting Broadcasting with Biodata

Paul Tennent, Stuart Reeves, Steve Benford, Brendan Walker, Joe Marshall, Patrick Brundell, Rupert Meese, *University of Nottingham, UK*
Paul Harter, *Cleverplugs Ltd, UK*

Explores the explicit use of biodata as part of a narrative for television and film. Raises some key research challenges about "acting" biodata and the nature of accessible biodata visualisations.

■ TECHNICAL PRESENTATIONS | 16AB

INTERACTING WITH ROBOTS & AGENTS

SESSION CHAIR: Antonello De Angeli, *University of Trento, Italy*

ToCHI | The Role of Gender on Effectiveness and Efficiency of User-Robot Communication in Navigation Tasks

Theodora Koulouri, Stanislao Lauria, Robert D. Macredie, *Brunel University*

Sherry Chen, *National Central University*

Describes gender differences in spatial communication and navigation in Human-Robot Interaction. Presents a novel methodology and design recommendations for dialogue and navigating systems that equally support users of both genders.

PAPER | Ripple Effects of an Embedded Social Agent: A Field Study of a Social Robot in the Workplace

Min Kyung Lee, Sara Kiesler, Jodi Forlizzi, Paul Rybski, *Carnegie Mellon University, USA*

Describe a long-term field study of a social delivery robot in a workplace. Can assist the development of agents, avatars, and robots for individuals and organizations.

PAPER | Designing Effective Gaze Mechanisms for Virtual Agents

Sean Andrist, Tomislav Pejisa, Bilge Mutlu, Michael Gleicher, *University of Wisconsin-Madison, USA*

A model for designing effective gaze mechanisms for virtual agents and its evaluation. The model will allow designers to create gaze behaviors that accomplish specific high-level outcomes.

CASE STUDY | How Does Telenoid Affect the Communication between Children in Classroom Setting?

Ryuji Yamazaki, *Japan Advanced Institute of Science and Technology, Japan*

Shuichi Nishio, Kohei Ogawa, *Advanced Telecommunications Research Institute International, Japan*

Hiroshi Ishiguro, *Osaka University, Japan*

Kohei Matsumura, *Japan Advanced Institute of Science and Technology, Japan*

Kensuke Koda, *Osaka University, Japan*

Tsutomu Fujinami, *Japan Advanced Institute of Science and Technology, Japan*

Describes the qualitative findings of a field study that revealed the effects of a tele-operated humanoid robot on facilitating schoolchildren's cooperation. Can assist in designing effective tele-communication tools in education.

■ TECHNICAL PRESENTATIONS | 17AB

USES OF MEDIA & CREATION OF WEB EXPERIENCES

SESSION CHAIR: Jan Gulliksen, *Uppsala University, Sweden*

PAPER | Too Close for Comfort: A Study of the Effectiveness and Acceptability of Rich-Media Personalized Advertising



Miguel Malheiros, Charlene Jennett, Sneha Patel, Sacha Brostoff, Martina Angela Sasse, *University College London, UK*

Describes first study investigating how personalized rich media ads are perceived by users. Findings can help design noticeable, interesting ads that are also comfortable for the user.

PAPER | Why Johnny Can't Opt Out: A Usability Evaluation of Tools to Limit Online Behavioral Advertising



Pedro Leon, Blase Ur, Richard Shay, Yang Wang, Rebecca Balebako, *Carnegie Mellon University, USA*
Lorrie Cranor, *Carnegie Mellon, USA*

Describes usability problems identified through a laboratory study to evaluate tools to limit OBA. Designers will be aware of these problems and could use our methodology to evaluate their tools.

PAPER | <Insert Image>: Helping the Legal Use of Creative Commons Images

Herkko Hietanen, Antti Salovaara, Kumaripaba Athukorala, *Helsinki Institute for Information Technology, Finland*
Yefeng Liu, *Waseda University, Japan*

We present an Open Media Retrieval model for searching and using Creative Commons content. The design will reduce accidental copyright infringements and the time needed for searching open content.

PAPER | Fighting for My Space: Coping Mechanisms for SNS Boundary Regulation

Pamela Wisniewski, Heather Lipford, David Wilson, *University of North Carolina at Charlotte, USA*

This paper presents results from a qualitative interview-based study to identify "coping mechanisms" that Social Networking Site users devise outside explicit boundary-regulation interface features in order to manage interpersonal boundaries.

■ TECHNICAL PRESENTATIONS | 18AB

TOOLS FOR VIDEO + IMAGES

SESSION CHAIR: Michael Rohs, *University of Munich, Germany*

NOTE | TeleAdvisor: A Versatile Augmented Reality Tool for Remote Assistance



Pavel Gurevich, *IBM Research - Haifa, Israel*
 Joel Lanir, *University of Haifa, Israel*
 Benjamin Cohen, *IBM Research, USA*
 Ran Stone, *IBM Research - Haifa, Israel*

Describes a hands-free transportable augmented reality system, consisting of a camera and a pico projector mounted on a tele-operated robotic arm. Can support remote assistance tasks around physical objects.

NOTE | DragLocks: Handling Temporal Ambiguities in Direct Manipulation Video Navigation

Thorsten Karrer, Moritz Wittenhagen, Jan Borchers, *RWTH Aachen University, Germany*

Discusses possible interaction breakdowns in direct manipulation video navigation systems in the presence of objects pausing in the video. Presents and evaluates two solutions that modify the trajectory geometry.

PAPER | CamBlend: An Object Focused Collaboration Tool

James Norris, Holger Schnädelbach, Guoping Qiu, *University of Nottingham, UK*

New panoramic focus+context video collaboration system designed to facilitate the interaction with and around objects. Exploratory study showed several successful new uses & existing problems in fractured spaces.

PAPER | Swift: Reducing the Effects of Latency in Online Video Scrubbing

Justin Matejka, Tovi Grossman, George Fitzmaurice, *Autodesk Research, Canada*

Describes two experiments to test the effects of latency on video navigation tasks and the Swift technique which is designed to mitigate these effects.

NOTE | Video Summagator: An Interface for Video Summarization and Navigation

Cuong Nguyen, Yuzhen Niu, Feng Liu, *Portland State University, USA*

Describes a 3D video visualization-based interface for video summarization and navigation. Allows a user to quickly look into the video cube, understand the video, and navigate to the content of interest.

NOTE | Video as Memorabilia: User Needs for Collaborative Automatic Mobile Video Production

Sami Vihavainen, *Aalto University, Finland*
 Sujeet Mate, *Nokia Research Center, Finland*
 Lassi Liikkanen, *Aalto University, Finland*
 Igor Curcio, *Nokia Research Center, Finland*

Presents guidelines for designers of collaborative video production tools based on a field study of automatic remixing of audience captured video. Can assist in considering memorabilia, control and acknowledgement issues.

■ TECHNICAL PRESENTATIONS | 18CD

SUSTAINABILITY AND BEHAVIOR CHANGE

SESSION CHAIR: A.J. Brush, *Microsoft Research, USA*

PAPER | Collapse Informatics: Augmenting the Sustainability & ICT4D Discourse in HCI



Bill Tomlinson, *University of California, Irvine, USA*
 M. Six Silberman, *Bureau of Economic Interpretation, USA*
 Donald Patterson, *University of California, Irvine, USA*
 Yue Pan, Eli Blevis, *Indiana University, USA*

Augments the discourse on sustainable HCI and ICT4D to include notions of preparation for and adaptation to potential societal collapse, suggesting exemplars for interactivity design in response to such scenarios.

PAPER | Beyond Energy Monitors: Interaction, Energy, and Emerging Energy Systems

James Pierce, Eric Paulos, *Carnegie Mellon University, USA*

Reviews energy-related literature from within and outside of HCI. Characterizes a dominant cluster of work related to “energy consumption feedback”, and points to design and research opportunities with emerging energy systems.

PAPER | The Dubuque Water Portal: Evaluation of the Uptake, Use and Impact of Residential Water Consumption Feedback

Thomas Erickson, Mark Podlaseck, *IBM, USA*
Sambit Sahu, Jing D. Dai, Tian Chao, Milind Naphade, *IBM T.J. Watson Research Center, USA*

Evaluation of a water portal deployed to 303 homes that used feedback and social techniques to produce a 6.6% decrease in water consumption. Can assist designers of residential feedback systems.

NOTE | Embedded Interaction in a Water Fountain for Motivating Behavior Change in Public Space

Ernesto Arroyo, *Universitat Pompeu Fabra, Spain*
Leonardo Bonanni, *MIT Media Laboratory, USA*
Nina Valkanova, *Universitat Pompeu Fabra, Spain*

Presents an augmented water fountain with audiovisual feedback aimed at improving and motivating the water-drinking experience. Shows an inspiring way of conducting long-term in-the-wild studies that affect users and public space.

NOTE | A Transformational Product to Improve Self-Control Strength: the Chocolate Machine

Flavius Kehr, *University of Koblenz-Landau, Germany*
Marc Hassenzahl, Matthias Laschke, Sarah Diefenbach, *Folkwang University of Arts, Germany*

The Chocolate Machine is an exploratory interactive product to train self-control strength. Self-control is at the heart of many desirable behaviours, but often neglected by Persuasive Technologies.

■ TECHNICAL PRESENTATIONS | 19AB

HCI4D: BUSINESS

SESSION CHAIR: Batya Friedman, *University of Washington, USA*

PAPER | Understanding Negotiation in Airtime Sharing in Low-income Microenterprises



Nithya Sambasivan, *University of California, USA*
Edward Cutrell, *Microsoft Research India, India*

Paper presents a study of airtime sharing among low income, microenterprises in India. Findings and design thoughts point to lessons for bandwidth sharing in HCI and HCI4D.

CASE STUDY | Taking Micro-Enterprise Online: The Case of Kenyan Businesses

Mokeira Masita-Mwangi, *Nokia Research Center, Kenya*
Nancy Mwakaba, *Nokia Research Center, Finland*
Jussi Impio, *Nokia Research Center, Kenya*

This paper presents findings, of Kenyan micro-entrepreneurs' need for websites. It highlights need for technology to work with existing practices rather than enforce its own form of usage onto users.

CASE STUDY | Experiences with Bulk SMS for Health Financing in Uganda

Melissa Densmore, *University of California, Berkeley, USA*

Analyzes the deployment and use of a Bulk SMS system for a health financing project in Uganda over 6 months. Can assist designers in understanding organizational use of SMS platforms.

CASE STUDY | Design Re-thinking for the Bottom of the Pyramid: A Case Study Based on Designing Business Software for SMEs in India

Visvapriya Sathiyam, *SAP Labs, India*
Muktha Hiremath, *SAP Labs, USA*

Case study highlighting design factors considered while adapting enterprise software for Indian consumers. Can be useful for those building technology solutions for developing markets.

■ SPECIAL INTEREST GROUP | 11A

INVITED SIG: DESIGNING FOR THE LIVING ROOM TV EXPERIENCE

ORGANIZERS

Jhilmil Jain, Anne Aula, *Google, USA*

This SIG brings together practitioners and academic user researchers and designers who are interested in or working on defining both the software and hardware aspects of the user experience for TV.

■ SPECIAL INTEREST GROUP | 11B

CHI2012 GAMES AND ENTERTAINMENT COMMUNITY SIG: SHAPING THE FUTURE

ORGANIZERS

Regina Bernhaupt, *IRIT - ICS, France*
Katherine Isbister, *NYU-Poly*

The Games and Entertainment SIG will explore where to take this community in future at CHI, including identifying researchers and commercial practitioners interested in leadership of the group.

See Conference Reception on next page...



Monday | Evening | 18:00—20:00

**SPECIAL EVENT
CONFERENCE RECEPTION &
EXHIBITS GRAND OPENING
COMMONS (EXHIBIT HALL 4) | 18:00-20:00**










Kick off CHI 2012 at the Grand Opening Reception, located inside The Commons. The Commons is the ideal place to catch up with old friends and meet new ones. The reception will feature the best that Austin has to offer, including Texas style cuisine and entertainment. Austin is the Live Music Capital of the World, after all! Following the reception, we hope that you will take advantage of all the restaurants that Austin has to offer – from classic Texas BBQ to authentic Mexican cuisine. Gather a group of colleagues for an informal dinner to satisfy your Texas-sized appetites in the famous 6th Street Music District.

Admission to the opening reception is included with your conference registration; additional tickets may be purchased at the Registration Desk. Tickets will not be available at the door.



8 May 2012 | Tuesday

— = 10 minutes (Note, short Case Study)
— = 15 minutes (alt.chi)
— = 20 minutes (Paper, ToCHI, long Case Study)

	8:30-9:20	9:30-10:50	11:30-12:50	14:30-15:50	16:30- 17:50
Ballroom D	CHI Madness	Special Event SIGCHI Town Hall meeting on Peer Reviewing at CHI	Special Event CHI Video Program Premiere	Special Event Student Games Competition	
Ballroom E		Technical Presentations I Am How I Touch: Authenticating Users	Technical Presentations Kick it! Interfaces for Feet and Walking	Technical Presentations Understanding Online Communication	
Ballroom F		Panel Music Interaction Research - Let's Get the Band Back Together	Panel Tangible Interfaces for Children: Cognitive, Social, & Physical Benefits and Challenges	Panel Hunting for Fail Whales: Lessons from Deviance and Failure in Social Computing	
Ballroom G		Technical Presentations Visionary Models + Tools	Technical Presentations Music Across CHI 	Technical Presentations Performative Emergency Simulation	
12AB		Technical Presentations Pen + Touch	Technical Presentations Tools and Stats in Evaluation Studies 	Technical Presentations The Tools of the Trade	
16AB		Technical Presentations Critical Perspectives on Design 	Technical Presentations Personas and Design 	Technical Presentations Needle in the Haystack	
17AB		Technical Presentations Affective Presence	Technical Presentations Values in Research Practice  	Technical Presentations Publics and Civic Virtues 	
18AB		Technical Presentations Games: Community + Communication	Technical Presentations Literacy on the Margin	Technical Presentations Promoting Educational Opportunity	
18CD		Technical Presentations Healthcare + Technology: Putting Patients First 	Technical Presentations Participatory Design with Older People	Technical Presentations Interfaces for Health & Well Being	
19AB		Technical Presentations It's a Big Web!	Technical Presentations Space: The Interaction Frontier	Technical Presentations Crowdsourcing and Peer Production I 	
11A		Course 15 User Experience Evaluation in ... <i>(See Page 19 for details)</i>	Course 15 (continued)	Course 17 Practical Statistics for User ... <i>(See Page 19 for details)</i>	Course 17 (continued)
11B		Course 5 (part 2 of 2) Art and HCI in Collaboration... <i>(See Page 19 for details)</i>	Invited SIG Digital Arts Community ... Research in Digital Arts, HCI ...	Invited SIG Sustainability Community Inventory of Issues and ...	
13A		Course 11 Agile UX: Bridging the Gulf ... <i>(See Page 19 for details)</i>	Course 11 (continued)	Course 18 Social Interaction Design for ... <i>(See Page 19 for details)</i>	Course 18 (continued)
13B		Course 12 Designing with and for Children ... <i>(See Page 19 for details)</i>	Course 12 (continued)	Course 12 (continued)	Course 10 (part 2 of 2) Finding your way in Design Research <i>(See Page 19 for details)</i>
14		Course 14 Inspiring Mobile Interaction Design <i>(See Page 19 for details)</i>	Course 14 (continued)	Course 19 User Experience Evaluation Methods <i>(See Page 19 for details)</i>	Course 19 (continued)
15		Course 13 Designing with the Mind in Mind ... <i>(See Page 19 for details)</i>	Course 13 (continued)	Course 16 Innovating from Field Data: Driving ... <i>(See Page 19 for details)</i>	Course 21 User Interface Design and Adapt ... <i>(See Page 19 for details)</i>

Technical Presentations include Paper, Note, Case Study and ToCHI presentations

Exhibits	Interactivity	Posters	Special Events		
Commons (Exhibit Hall 4) 10:50-18:00	Permanent Collection 10:50-19:00 Limited Time Collection 15:50-19:00 Presenters available 15:50-19:00 Commons (Exhibit Hall 4)	Design & Interaction (WIP100-WIP247) Commons (Exhibit Hall 4)	Interact with Poster Authors Commons (Exhibit Hall 4) 10:50-11:30	Job Fair Commons (Exhibit Hall 4) Recruiters available 17:00-19:00	Video Program Encore Ballroom D 19:00-20:30



CHI MADNESS | BALLROOM D

8:30-9:20

SESSION CHAIRS:

Paul André, *Carnegie Mellon University*
Petra Sundström, *Salzburg University*

CHI Madness returns to give everyone a lightning speed overview of the day's program.

■ SPECIAL EVENT | BALLROOM D

TOWN HALL MEETING ON PEER REVIEWING AT CHI

SESSION CHAIR: Joseph "Jofish" Kaye, *Nokia Research*

Jofish Kaye, *Nokia Research Center, Finland*
Jeffrey Bardzell, *Indiana University, USA*
Susanne Bødker, *Aarhus University, Denmark*
Rebecca Grinter, *Georgia Tech, USA*
Jonathan Grudin, *Microsoft Research, UK*
James Landay, *University of Washington, USA*

The CHI community is vibrant, growing, and interdisciplinary, and peer review is at the heart of what it means to be a community of researchers. In this Special Town Hall on Peer Review, we discuss the question of how to grow and change our reviewing practices to meet the challenge of both ongoing growth and increasing interdisciplinary participation. Our community has seen a wide variety of explorations of the best way to change and improve our practices: alt.chi's open reviewing, CSCW's revise & resubmit process and UIST's removal of page limits are all ways to address the changing nature of this research. This Town Hall will provide an opportunity to discuss and address this ongoing question.

■ TECHNICAL PRESENTATIONS | BALLROOM E

I AM HOW I TOUCH: AUTHENTICATING USERS

SESSION CHAIR: Xiang Cao, *Microsoft Research Asia, China*

ToCHI | Homogenous Physio-Behavioral Visual and Mouse Based Biometric

Omar Hamdy, *Helwan University*
Issa Traore, *University of Victoria*

Describes a new biometric technique that uses cognitive features and mouse dynamics without the introduction of new hardware. This technique opens doors for advanced biometrics used for static authentication.

PAPER | Biometric-Rich Gestures: A Novel Approach to Authentication on Multi-touch Devices

Napa Sae-Bae, Kowsar Ahmed, Katherine Isbister, Nasir Memon,
Polytechnic Institute of NYU, USA

Describes a new approach to login/authentication on multi-touch devices, using behavior-based biometrics gleaned from five-finger gestures. This approach better aligns usability with security, than is the case for text-based passwords.

PAPER | Touch me once and I know it's you! Implicit Authentication based on Touch Screen Patterns

Alexander De Luca, Alina Hang, Frederik Brudy, Christian Lindner,
Heinrich Hussmann, *University of Munich, Germany*

Presents two user studies of an implicit authentication approach for touch screen phones. Proofs that it is possible to distinguish users by the way they perform the authentication.

PAPER | WebTicket: Account Management Using Printable Tokens

Eiji Hayashi, Bryan Pendleton, *Carnegie Mellon University, USA*
Fatih Ozenc, *Autodesk Inc., USA*
Jason Hong, *Carnegie Mellon University, USA*

Describes development and evaluations of WebTicket that manages web accounts using paper-based or mobile-phone-based tickets. Demonstrates that WebTicket provides reliable and phishing-resilient user authentication.

■ PANEL | BALLROOM F

MUSIC INTERACTION RESEARCH - LET'S GET THE BAND BACK TOGETHER

PANELISTS

Lassi Liikkanen, *Helsinki Institute for Information Technology HIIT, Finland*
Christopher Amos, *Carnegie Hall, USA*
Sally Jo Cunningham, *University of Waikato, New Zealand*
J. Stephen Downie, *University of Illinois at Urbana-Champaign, USA*
David McDonald, *University of Washington, USA*

This panel discusses music interaction as a part of digital media research. We consider why music interaction research has become marginal in HCI and how to revive it.

■ TECHNICAL PRESENTATIONS | BALLROOM G

VISIONARY MODELS + TOOLS

SESSION CHAIR: Duncan Brumby, *University College London, UK*

PAPER | Color Naming Models for Color Selection, Image Editing and Palette Design

Jeffrey Heer, *Stanford University, USA*
Maureen Stone, *Tableau Software, USA*

Contributes methods for constructing probabilistic models of color naming from unconstrained color-name judgments. These models enable new ways for users to express colors and evaluate their designs.

PAPER | The Untapped Promise of Digital Mind Maps

Haakon Faste, Honray Lin, *Carnegie Mellon University, USA*

Existing mind mapping software applications have been evaluated, ethnographic research performed, and a framework of principles has been developed to inform the design of future tools for collaborative knowledge management.

PAPER | Delta: A Tool For Representing and Comparing Workflows

Nicholas Kong, *University of California, Berkeley, USA*
Tovi Grossman, *Autodesk Research, Canada*
Björn Hartmann, Maneesh Agrawala, *University of California, Berkeley, USA*
George Fitzmaurice, *Autodesk Research, Canada*

Describes a system that aids users in comparing workflows, specifically those used in image-editing tasks. Can assist designers in developing tools for comparing workflows in various domains.

PAPER | QuickDraw: Improving Drawing Experience for Geometric Diagrams

Salman Cheema, *University of Central Florida, USA*
Sumit Gulwani, *Microsoft Research, UK*
Joseph LaViola, *University of Central Florida, USA*

QuickDraw is a pen-based prototype diagramming that uses constraint inference and a novel beautification algorithm to enable the drawing of precise geometric diagrams

■ TECHNICAL PRESENTATIONS | 12AB

PEN + TOUCH

SESSION CHAIR: Carman Neustaedter, *Simon Fraser University, Canada*

NOTE | Natural Use Profiles for the Pen: An Empirical Exploration of Pressure, Tilt, and Azimuth

Yizhong Xin, *Kochi University of Technology, Kami, Kochi, Japan*
Xiaojun Bi, *University of Toronto, Canada*
Xiangshi Ren, *Kochi University of Technology, Kami, Kochi, Japan*

This is the first study to investigate the natural profiles of pen pressure, tilt, and azimuth (PTA) and their inter-relationships, providing fundamental data for efficient natural UI design.

ToCHI | Evaluating and Understanding the Usability of a Pen-based Command System for Interactive Paper

Chunyuan Liao, *FXPAL, USA*
François Guimbretière, *Cornell University, USA*

User studies on a pen-gesture-based interactive paper system for Active Reading. Can help understand how such a system is learned and used in typical scenarios and how researchers evaluate it.

PAPER | A-Coord Input: Coordinating Auxiliary Input Streams for Augmenting Contextual Pen-Based Interactions

Khalad Hasan, *University of Manitoba, Canada*
Xing-Dong Yang, *University of Alberta, Canada*
Andrea Bunt, Pourang Irani, *University of Manitoba, Canada*

We explore a-coord input, a technique that involves coordinating two auxiliary pen channels in conjunction. Experiments demonstrate a-coord input's effectiveness for both discrete-item selection, and multi-parameter selection and manipulation tasks.

PAPER | Personalized Input: Improving Ten-Finger Touchscreen Typing through Automatic Adaptation

Leah Findlater, Jacob Wobbrock, *University of Washington, USA*

We introduce and evaluate two novel personalized keyboard interfaces. Results show that personalizing the underlying key-press classification model improves typing speed, but not when accompanied by visual adaptation.

NOTE | Bimanual Marking Menu for Near Surface Interactions

François Guimbretière, Chau Nguyen, *Cornell University, USA*

We describe a mouseless, near-surface version of the Bimanual Marking Menu system. The system offers a large number of accessible commands and does not interfere with multi-touch interactions.

■ TECHNICAL PRESENTATIONS | 16AB

CRITICAL PERSPECTIVES ON DESIGN

SESSION CHAIR: Peter Wright, *Newcastle University, UK*

PAPER | What Should We Expect From Research Through Design?

William Gaver, *Goldsmiths, University of London, UK*

This essay characterises research through design theory as provisional and elaborative, and suggests annotated portfolios as a way forward. Will benefit those wishing to understand design's contribution to HCI.

PAPER | Sustainably Unpersuaded: How Persuasion Narrows our Vision of Sustainability

Hronn Brynjarsdottir, Maria Håkansson, *Cornell University, USA*
James Pierce, *Carnegie Mellon University, USA*
Eric Baumer, *Cornell University, USA*
Carl DiSalvo, *Georgia Tech, USA*
Phoebe Sengers, *Cornell University, USA*

Critically analyzes persuasive technology as a modernist approach to solving social problems. Identifies structural limitations of persuasive technology as an approach to sustainability and offers alternatives.

PAPER | Undesigning Technology: Considering the Negation of Design by Design

James Pierce, *Carnegie Mellon University, USA*

Motivates and develops the question: To what extent and in what ways should the intentional negation of technology be an acknowledged and legitimate area of design research activity within HCI?

PAPER | Affordances in HCI: Toward a Mediated Action Perspective

Victor Kaptelinin, *University of Bergen, Norway*
Bonnie Nardi, *University of California, Irvine, USA*

Discusses analyses of affordances in HCI research and outlines a mediated action perspective on affordances as a relational property of a three-way interaction between the person, mediational means, and environment.

■ TECHNICAL PRESENTATIONS | 17AB

AFFECTIVE PRESENCE

SESSION CHAIR: Albrecht Schmidt, *University of Stuttgart, Germany*

PAPER | Group Hedonic Balance and Pair Programming Performance: Affective Interaction Dynamics as indicators of Performance

Malte Jung, *Stanford University, USA*
Jan Chong, *OnLive, USA*
Larry Leifer, *Stanford University, USA*

Study examining the relationship between affective interaction dynamics and performance in pair-programming teams. Presents researchers with new methods and theory regarding the role of emotions in team interaction.

PAPER | Learning How to Feel Again: Towards Affective Workplace Presence and Communication Technologies

Anbang Xu, *University of Illinois at Urbana-Champaign, USA*
Jacob Biehl, Eleanor Rieffel, Thea Turner, William van Melle, *FX Palo Alto Laboratory, Inc., USA*

Describes a technique for estimating affective state and communication preferences. The technique uses non-invasive data from a presence state stream and provides more accurate predictions than humans who work together.

PAPER | AffectAura: An Intelligent System for Emotional Memory

Daniel McDuff, *Massachusetts Institute of Technology, USA*
Amy Karlson, Ashish Kapoor, Asta Roseway, Mary Czerwinski, *Microsoft Research, UK*

We present AffectAura, an emotional prosthetic, that combines a multi-modal sensor system for continuously predicting user affective states with an interface for user reflection.

PAPER | Understanding Heart Rate Sharing: Towards Unpacking Physiosocial Space

Petr Slovák, *Vienna University of Technology, Austria*
Joris Janssen, *Philips Research, Netherlands*
Geraldine Fitzpatrick, *Vienna University of Technology, Austria*

Explores how people make sense of interpersonal heart rate feedback in everyday social settings through a technology probe deployment. Identifies two categories of effects, with implications for supporting social connectedness.

■ TECHNICAL PRESENTATIONS | 18AB

GAMES: COMMUNITY + COMMUNICATION

SESSION CHAIR: Steve Feiner, *Columbia University, USA*

CASE STUDY | Martian Boneyards: Can a Community of Players be a Community of Practice?

Jodi Asbell-Clarke, Elisabeth Sylvan, *TERC, USA*

Case study of Martian Boneyards, an MMO-based science-mystery game designed to foster collaborative inquiry. Demonstrates how designers can shape an evolving game narrative, responding to players' activities and accumulating knowledge.

PAPER | Athletes and Street Acrobats: Designing for play as a Community Value in Parkour

Annika Waern, Elena Balan, Kim Nevelsteen, *Mobile Life Centre, Stockholm University, Sweden*

We developed a mobile community service for the Parkour community. We discuss how the successful design relied understanding the culture as a 'fun community', valuing play over achievement and competition.

PAPER | Communication and Commitment in an Online Game Team

Laura Dabbish, Robert Kraut, Jordan Patton, *Carnegie Mellon University, USA*

Describes an experiment on inducing communication in online game groups. Examines the influence of communication topic and communicator role on group commitment. Extends our understanding of commitment in online groups.

PAPER | Twiage: A Game for Finding Good Advice on Twitter

Max Van Kleek, Daniel Smith, Ruben Stranders, m.c. schraefel, *University of Southampton, UK*

Examines the feasibility of crowdsourcing the identification of "useful advice" on Twitter through a Game with a Purpose (GWAP) called Twiage.

■ TECHNICAL PRESENTATIONS | 18CD

HEALTHCARE + TECHNOLOGY: PUTTING PATIENTS FIRST

SESSION CHAIR: Katie Siek, *University of Colorado at Boulder, USA*

PAPER | Findings of e-ESAS: A Mobile Based Symptom Monitoring System for Breast Cancer Patients in Rural Bangladesh



Md Haque, Ferdaus Kawsar, Mohammad Adibuzzaman, Sheikh Ahamed, *Marquette University, USA*

Richard Love, *International Breast Cancer Research Foundation, USA*

Rumana Dowla, *Amader Gram, Bangladesh*

David Roe, *International Breast Cancer Research Foundation, USA*

Syed Hossain, Reza Selim, *Amader Gram, Bangladesh*

We present the findings of our 31-week long field study and deployment of e-ESAS - the first mobile-based remote symptom monitoring system developed for rural BC patients.

PAPER | Problems of Data Mobility and Reuse in the Provision of Computer-based Training for Screening Mammography

Mark Hartswood, Rob Procter, *University of Manchester, UK*

Paul Taylor, *University College London, UK*

Lilian Blot, *University of York, UK*

Stuart Anderson, *University of Edinburgh, UK*

Mark Rouncefield, *Lancaster University, UK*

Roger Slack, *Bangor University, UK*

Describes the problems encountered reusing clinical data to deliver training in breast cancer screening. Details how data curation processes and tools can be better designed to improve data reuse.

NOTE | Supporting visual assessment of food and nutrient intake in a clinical care setting

Rob Comber, Jack Weeden, Jennifer Hoare, Stephen Lindsay, *Newcastle University, UK*

Gemma Teal, Alastair Macdonald, *Glasgow School of Art, UK*

Lisa Methven, *University of Reading, UK*

Paula Moynihan, Patrick Olivier, *Newcastle University, UK*

Presents the mappmal application to support visual assessment of food consumption in a clinical setting. The application provides a reliable but conservative measure of nutritional intake from partially consumed meals.



NOTE | Tackling Dilemmas in Supporting ‘The Whole Person’ in Online Patient Communities

Jina Huh, Rupa Patel, Wanda Pratt, *University of Washington, USA*

We discuss ways to better support patients’ personal as well as medical information needs in online patient community settings.

PAPER | Interaction Proxemics and Image Use in Neurosurgery

Helena M. Mentis, Kenton O’Hara, *Microsoft Research, UK*
Abigail Sellen, *Microsoft Research, USA*
Rikin Trivedi, *Addenbrookes Hospital, UK*

Articulates the spatial organization of collaborative work practices in neurosurgery theatres by drawing on interaction proxemics and F-formations. Discusses opportunities and difficulties relating to touchless interaction in surgical settings.

■ **TECHNICAL PRESENTATIONS | 19AB**

IT’S A BIG WEB!

SESSION CHAIR: Wayne Lutters, *UMBC, USA*

PAPER | Talking in Circles: Selective Sharing in Google+

Sanjay Kairam, *Stanford University, USA*
Michael Brzozowski, David Huffaker, Ed Chi, *Google Inc., USA*

This paper describes a mixed-methods analysis of selective sharing behavior in social networks through study of Google+. It also offers a glimpse into early behavior in a new social system.

PAPER | Omnipedia: Bridging the Wikipedia Language Gap

Patti Bao, Brent Hecht, Samuel Carton, Mahmood Quaderi,
Michael Horn, Darren Gergle, *Northwestern University, USA*

We present Omnipedia, a system that allows users to gain insight from 25 Wikipedia language editions simultaneously. We discuss the system, its multilingual data mining algorithms, and a 27-user study.

PAPER | Social Annotations in Web Search

Aditi Muralidharan, *University of California, Berkeley, USA*
Zoltan Gyongyi, Ed Chi, *Google Inc., USA*

Surprisingly, using eyetracking and interviews, we found social annotations in web search to be neither universally useful nor noticeable. However, further experimentations show possible improvements to annotation design.

CASE STUDY | Designing for a Billion Users: A Case Study of Facebook

Parmit Chilana, *University of Washington, USA*
Christina Holsberry, *Facebook, Inc, USA*
Flavio Oliveira, *Facebook, USA*
Andrew Ko, *University of Washington, USA*

A case study of what it is like to design for a billion users at Facebook. Highlights the perspectives of designers, engineers, UX researchers, and other product stakeholders.

HIGHLIGHT ON POSTERS BREAK

COMMONS (EXHIBIT HALL 4) | 10:50-11:30

Posters are located in the Commons (Exhibit Hall 4, Level 1). Poster authors are scheduled to stand by their posters at this time. Please visit the posters each day to see all of the exciting work being done and discuss new ideas with poster presenters.

Works-In-Progress focusing on:
Design (WIP100 - WIP147)
User Interaction (WIP200 - WIP247)

■ SPECIAL EVENT | BALLROOM D
CHI 2012 VIDEO PROGRAM PREMIERE

The videos track is a forum for human-computer interaction that leaps off the page: vision videos, reflective pieces, humor, novel interfaces, studies and other moving images relevant to HCI. This year's selections will premiere on Tuesday morning, during the 11:30 session. There will be an encore performance at 19:00, Tuesday evening, culminating in the Golden Mouse award ceremony. Popcorn and drinks are available at the evening performance.

■ TECHNICAL PRESENTATIONS | BALLROOM E
KICK IT! INTERFACES FOR FEET AND WALKING

SESSION CHAIR: Yang Li, *Google Research, USA*

ToCHI | Walking improves your cognitive map in environments that are large-scale and large in extent

Roy Ruddle, *University of Leeds, UK*
 Ekaterina Volkova, *Max Planck Institute for Biological Cybernetics, Tübingen, Germany*
 Heinrich Bülthoff, *Korea University, Republic of Korea*

No previous studies have used an omni-directional treadmill to investigate navigation. Contrary to previous studies using small-scale spaces, we show that physical locomotion is critical for rapid cognitive map development.

PAPER | Putting Your Best Foot Forward: Investigating Real-World Mappings for Foot-based Gestures

Jason Alexander, *Lancaster University, UK*
 Teng Han, William Judd, *University of Bristol, UK*
 Pourang Irani, *University of Manitoba, Canada*
 Sriram Subramanian, *University of Bristol, UK*

This paper investigates real-world mappings of foot-based gestures to virtual workspaces. It conducts a series of studies exploring: user-defined mappings, gesture detection and continuous interaction parameters.

PAPER | ShoeSense: A New Perspective on Gestural Interaction and Wearable Applications

Gilles Bailly, Jörg Müller, *Technische Universität Berlin, Germany*
 Michael Rohs, *University of Munich, Germany*
 Daniel Wigdor, *University of Toronto, Canada*
 Sven Kratz, *University of Munich, Germany*

Describes a novel wearable device consisting of a shoe-mounted sensor and offering a novel and unique perspective for eyes-free gestural interaction. Presents and Evaluates three novel gesture sets.

NOTE | Bootstrapper: Recognizing Tabletop Users by their Shoes

Stephan Richter, Christian Holz, Patrick Baudisch, *Hasso Plattner Institute, Germany*

Reformulating the user recognition problem as a shoe recognition problem and present a prototype that recognizes tabletop users.

■ PANEL | BALLROOM F
TANGIBLE INTERFACES FOR CHILDREN: COGNITIVE, SOCIAL, & PHYSICAL BENEFITS AND CHALLENGES
PANELISTS

Shuli Gilutz, *Interdisciplinary Center (IDC) Herzliya, Israel*
 Sandra Calvert, *Georgetown University, USA*
 Kathleen Kremer, *Fisher-Price, USA*
 Barbara Chamberlin, *New Mexico State University, USA*
 Geri Gay, *Cornell University, USA*

Presentation and discussion of children using a variety of tangible interfaces, the challenges and benefits they encountered, and the importance of looking at the connection between psychological factors and design.

■ TECHNICAL PRESENTATIONS | BALLROOM G
MUSIC ACROSS CHI

SESSION CHAIR: Rebecca Fiebrink, *Princeton University, USA*

PAPER | Using Rhythmic Patterns as an Input Method


Emilien Ghomi, Guillaume Faure, Stephane Huot, Olivier Chapuis, Michel Beaudouin-Lafon, *Univ Paris-Sud, France*

Describes the use of Rhythmic Patterns for Interaction. Reports the results of two experiments showing that users can reliably reproduce and memorize rhythmic patterns.

PAPER | PULSE: The Design and Evaluation of an Auditory Display to Provide a Social Vibe

David McGookin, Stephen Brewster, *University of Glasgow, UK*

Investigates the use of ambient audio to present collocated geo-social media as a user moves through the environment. Provides guidance on re-integrating geo-social media into physical environment.

ToCHI | Experiencing Coincidence during Digital Music Listening

Tuck Wah Leong, *Newcastle University, UK*
 Frank Vetere, Steve Howard, *The University of Melbourne, Australia*

Describes technology-mediated experiences of coincidences during digital music listening and the elements involved. Demonstrates the use of McCarthy and Wright's experience framework to an empirical investigation of user experience.

CASE STUDY | Designing Virtual Instruments with Touch-Enabled Interface

Zhimin Ren, Ravish Mehra, *University of North Carolina, Chapel Hill, USA*
 Jason Cposky, *Renaissance Computing Institute, USA*
 Ming Lin, *University of North Carolina, Chapel Hill, USA*

Describes designing a virtual percussion instrument system on a multi-touch tabletop. Can be adopted by users collaboratively to emulate real-world percussive music playing and offer advantages of digital instruments.

NOTE | Listening Factors: A Large-Scale Principal Components Analysis of Long-Term Music Listening Histories

Dominikus Baur, Jennifer Büttgen, *University of Munich LMU, Germany*
 Andreas Butz, *University of Munich, Germany*

Describes a principal component analysis of automatically collected music listening histories. Groups and derives the impact of 48 listening behavior variables based on this analysis.

■ TECHNICAL PRESENTATIONS | 12AB

TOOLS AND STATS IN EVALUATION STUDIES

SESSION CHAIR: Jeff Heer, *Stanford University, USA*

CASE STUDY | Experiences with Collaborative, Distributed Predictive Human Performance Modeling



Bonnie John, *IBM Research, USA*
 Sonal Starr, Brian Utesch, *IBM Software Group, USA*

Case study using predictive human performance modeling in a real-world design project. Provides recommendations for avoiding pitfalls with existing modeling tools and design ideas for future collaborative modeling tools.

PAPER | Comparing Averages in Time Series Data

Michael Correll, Danielle Albers, *University of Wisconsin-Madison, USA*
 Steven Franconeri, *Northwestern University, USA*
 Michael Gleicher, *University of Wisconsin-Madison, USA*

This paper explores visualizations for efficient summarization through perceptually-motivated design and empirical assessment.

PAPER | Rethinking Statistical Analysis Methods for CHI

Maurits Kaptein, *Eindhoven University of Technology, Netherlands*
 Judy Robertson, *Heriot-Watt University, UK*

Identifies fundamental problems in the statistical methods commonly used in quantitative evaluations. Proposes solutions and recommendations for best practice.

PAPER | A Spatiotemporal Visualization Approach for the Analysis of Gameplay Data

Guenter Wallner, *University of Applied Arts, Austria*
 Simone Kriglstein, *University of Vienna, Austria*

Describes a visualization system for gameplay data which can be adapted to different kind of games and queries. It helps to analyze and better understand player behavior within a game.

■ TECHNICAL PRESENTATIONS | 16AB

PERSONAS AND DESIGN

SESSION CHAIR: Shaowen Bardzell, *Indiana University, USA*

PAPER | Personas and Decision Making in the Design Process: An Ethnographic Case Study



Erin Friess, *University of North Texas, USA*

An ethnographic case study that investigates the ways personas are invoked in design decision-making sessions. The relative value of personas considering their limited use in active decision-making is explored.

PAPER | How Do Designers and User Experience Professionals Actually Perceive and Use Personas?

Tara Matthews, *IBM Almaden, USA*
 Tejinder Judge, *Google Inc., USA*
 Steve Whittaker, *University of California at Santa Cruz, USA*

Qualitative study of how experienced user-centered design practitioners perceive and use personas for industrial software design. This paper can benefit practitioners who would like to use personas for design.

CASE STUDY | Revisiting Personas: The Making-of for Special User Groups

Christiane Moser, Verena Fuchsberger, Katja Neureiter, Wolfgang Sellner, Manfred Tscheligi, *University of Salzburg, Austria*

Describes a decision diagram for the creation of personas and its application. It aims at identifying the most appropriate approach taking into account different characteristics.

CASE STUDY | Incorporating UCD Into the Software Development Lifecycle: a Case Study

Andy Switzky, *Austin Energy, USA*

Case study describing the application of user centered design (UCD) for a project using multiple enterprise technologies. Identifies opportunities for successfully integrating UCD into the software development process.

■ TECHNICAL PRESENTATIONS | 17AB
VALUES IN RESEARCH PRACTICE

SESSION CHAIR: Christian Holz, *University of Potsdam, Germany*

PAPER | Next Steps for Value Sensitive Design


Alan Borning, *University of Washington, USA*
Michael Muller, *IBM, USA*

An essay presenting four suggestions for next steps for the evolution of Value Sensitive Design. Addresses issues that we argue have inhibited the more widespread adoption and appropriation of VSD.

ToCHI | The Relationship of Action Research to Human-Computer Interaction

Gillian R. Hayes, *University of California, Irvine, USA*

Describes historical, theoretical, and pragmatic aspects of conducting Action Research and its application to HCI.

PAPER | Being in the Thick of In-the-wild Studies: The Challenges and Insights of Researcher Participation

Rose Johnson, Yvonne Rogers, *University College London, UK*
Janet van der Linden, *The Open University, UK*
Nadia Bianchi-Berthouze, *University College London, UK*

Applies a participant-observation methodology to two in-the-wild user studies. Shows how researcher participation can help build rapport, enhance contextual understanding, encourage empathy and stimulate reflexivity.

NOTE | The Envisioning Cards: A Toolkit for Catalyzing Humanistic and Technical Imaginations


Batya Friedman, David Hendry, *University of Washington, USA*

We introduce the Envisioning Cards - an innovative toolkit for scaffolding value sensitive design processes in research and design activities. Early reports on their use include ideation, co-design, and heuristic critique.

CASE STUDY | Designing an Improved HCI Laboratory: A Massive Synthesis of Likes & Wishes

Haakon Faste, *Carnegie Mellon University, USA*

Case study describing a simple design exercise called "I like, I wish." Findings from this exercise relevant to the design of more human-centered HCI research environments are discussed.

■ TECHNICAL PRESENTATIONS | 18AB
LITERACY ON THE MARGIN

SESSION CHAIR: Juan Pablo Hourcade, *University of Iowa, USA*

PAPER | Improving Literacy in Developing Countries Using Speech Recognition-Supported Games on Mobile Devices

Anuj Kumar, Pooja Reddy, *Carnegie Mellon University, USA*
Anuj Tewari, *University of California, Berkeley, USA*
Rajat Agrawal, Matthew Kam, *Carnegie Mellon University, USA*

Field study discussing the extent to which productive training - enabled by speech-recognition-supported games - is superior to receptive vocabulary training for reading skills. Benefits development of speech-user interfaces for literacy.

PAPER | Interactive Visualization for Low Literacy Users: From Lessons Learnt To Design

Neesha Kodagoda, B L William Wong, Chris Rooney, Nawaz Khan, *Middlesex University, UK*

This paper summarizes the problems that low literacy user's face when searching for information online, and establishes a set of design principles for interfaces suitable for low literacy users.

CASE STUDY | Tale of Two Studies: Challenges in Field Research with Low-literacy Adult Learners in a Developed Country

Cosmin Munteanu, Heather Molyneaux, Julie Maitland, Daniel McDonald, *National Research Council Canada, Canada*
Rock Leung, *University of British Columbia, Canada*

Report on challenges and lessons learnt from the design of a mobile application to support adult literacy and its evaluation with a marginalized, functionally illiterate, group in a developed country.



CASE STUDY | Textual Tinkerability: Encouraging Storytelling Behaviors to Foster Emergent Literacy

Angela Chang, Cynthia Breazeal, Fardad Faridi, Tom Roberts, Glorianna Davenport, Henry Lieberman, Nick Montfort, *Massachusetts Institute of Technology, USA*

Case study of a storytelling prompt for fostering positive emergent literacy behaviors using: Detailed report of performative reading behaviors in emergent literacy. Video coding rubric for analyzing shared reading interactions.

■ TECHNICAL PRESENTATIONS | 18CD

PARTICIPATORY DESIGN WITH OLDER PEOPLE

SESSION CHAIR: Steven Dow, *Carnegie Mellon University, USA*

PAPER | Questionable Concepts: Critique as Resource for Designing with Eighty Somethings

John Vines, Mark Blythe, *Northumbria University, UK*
Stephen Lindsay, Paul Dunphy, *Newcastle University, UK*
Andrew Monk, *University of York, UK*
Patrick Olivier, *Newcastle University, UK*

Describes an exploration of critique as a participatory design method with groups of people aged over 80. Explains how critique is useful for identifying problems and iterating new ideas.

PAPER | Senior Designers: Empowering Seniors to Design Enjoyable Falls Rehabilitation Tools

Stephen Uzor, Lynne Baillie, *Glasgow Caledonian University, UK*
Dawn Skelton, *School of Health, UK*

Our findings suggest that seniors are an integral part of the design process and should be directly involved from the concept stages of the design of tools for their rehabilitation.

PAPER | Cheque Mates: Participatory Design of Digital Payments with Eighty Somethings

John Vines, Mark Blythe, *Northumbria University, UK*
Paul Dunphy, Vasillis Vlachokyriakos, Isaac Teece, *Newcastle University, UK*
Andrew Monk, *University of York, UK*
Patrick Olivier, *Newcastle University, UK*

Describes the participatory design of two paper-based digital payment systems with groups of people aged over 80. Provides guidance for researchers and practitioners collaborating with extraordinary user groups.

PAPER | Engaging Older People through Participatory Design

Stephen Lindsay, Daniel Jackson, Guy Schofield, Patrick Olivier, *Newcastle University, UK*

We present a participatory approach to design work with older people, an examination of the issues that arose applying it and reflections on issues that we encountered advocating the approach.

■ TECHNICAL PRESENTATIONS | 19AB

SPACE: THE INTERACTION FRONTIER

SESSION CHAIR: Chris Harrison, *Carnegie Mellon University, USA*

PAPER | Going Beyond the Surface: Studying Multi-Layer Interaction Above the Tabletop

Martin Spindler, Marcel Martsch, Raimund Dachselt, *University of Magdeburg, Germany*

Presents guidelines for designers of Tangible Magic Lens systems that are targeted for a tabletop environment. Can assist in developing effective multi-layer based interaction styles.

PAPER | A Comparative Evaluation of Finger and Pen Stroke Gestures

Huawei Tu, Xiangshi Ren, *Kochi University of Technology, Japan*
Shumin Zhai, *Google Research, USA*

First study investigating the differences and similarities between finger and pen gestures. Can assist UI designers of finger-based gesture design in applying the principles, methods and findings in our study.

PAPER | A Handle Bar Metaphor for Virtual Object Manipulation with Mid-Air Interaction

Peng Song, Wooi Boon Goh, William Hutama, Chi-Wing Fu, Xiaopei Liu, *Nanyang Technological University, Singapore*

A novel handle bar metaphor is proposed to realise a suite of intuitive and highly-controllable mid-air interaction for manipulating single/multiple virtual 3D objects with low-resolution depth sensors like Kinect.

PAPER | Fly: Studying Recall, Macrostructure Understanding, and User Experience of Canvas Presentations

Leonhard Lichtschlag, Thomas Hess, Thorsten Karrer, Jan Borchers,
RWTH Aachen University, Germany

Presents a user study to investigate the effect of the canvas presentation format on recall, macrostructure understanding, and user experience.

■ SPECIAL INTEREST GROUP INVITED | 11B

DIGITAL ARTS COMMUNITY: ARTICULATING LINES OF RESEARCH IN DIGITAL ARTS, HCI, AND INTERACTION

ORGANIZERS

Jill Fantauzzacoffin, *Georgia Tech, USA*

Linda Candy, *Sydney University, Australia*

Ayoka Chenzira, *Spelman College, USA*

Ernest Edmonds, *De Montfort University, UK*

David England, *LJMU, UK*

Thecla Schiphorst, *Simon Fraser University, Canada*

Atau Tanaka, *Newcastle University, UK*

This SIG initiates an essential step in establishing the Digital Arts at CHI by working with the audience to articulate traditions of contribution.

LUNCH BREAK | 12:50-14:30

There are many restaurants available in the area. Concession stands will also be open during this lunch break in the Commons (Exhibit Hall 4, Level 1).



■ STUDENT GAMES COMPETITION | BALLROOM D

Hit It! - An Apparatus for Upscaling Mobile HCI Studies
Niels Henze, *University of Oldenburg, Germany*

Power Defense: A Serious Game for Improving Diabetes Numeracy
Bill Kapralos, Aaron DeChamplain, Ian McCabe, Matt Stephan,
University of Ontario Institute of Technology, Canada

Motion Chain: A Webcam Game for Crowdsourcing Gesture Collection
Ian Spiro, *New York University, USA*

Herding Nerds on your Table: NerdHerder, a Mobile Augmented Reality Game
Yan Xu, Sam Mendenhall, Vu Ha, *Georgia Tech, USA*
Paul Tillery, *Savannah College of Art and Design, USA*
Joshua Cohen, *Berklee College of Music, USA*

BombPlus- Use NFC and Orientation Sensor to Enhance User Experience
Chao-Ju Huang, Chien-Pang Lin, Min-Lun Tsai, Fu-Chieh Hsu,
National Taiwan University, Taiwan

Combiform: Beyond Co-attentive Play, a Combinable Social Gaming Platform
Edmond Yee, Josh Joiner, Tai An, Andrew Dang, *University of Southern California, USA*

■ TECHNICAL PRESENTATIONS | BALLROOM E

UNDERSTANDING ONLINE COMMUNICATION
SESSION CHAIR: Sharoda Paul, *GE Global Research, USA*

PAPER | Profanity Use in Online Communities

Sara Sood, *Pomona College, USA*
Judd Antin, Elizabeth Churchill, *Yahoo! Research, USA*

Exposes poor performance of list-based profanity detection systems through evaluation of systems and failures. Analysis of community differences regarding creation/tolerance of profanity on social news site suggests new approach.

PAPER | Consensus Building in Open Source User Interface Design Discussions

Roshanak Zilouchian Moghaddam, *University of Illinois at Urbana-Champaign, USA*
Brian Bailey, *University of Illinois-Urbana, USA*
Wai-Tat Fu, *University of Illinois at Urbana-Champaign, USA*

Reports on a study of consensus building in user interface design discussions in open source software. Provides design implications for promoting consensus in distributed discussions of user interface design issues.

PAPER | “I Can’t Get No Sleep”: Discussing #insomnia on Twitter

Sue Jamison-Powell, Conor Linehan, Laura Daley, Andrew Garbett,
Shaun Lawson, *University of Lincoln, UK*

Examines the disclosure of insomnia over twitter, recognising two themes: description of experience, and coping mechanisms. Design implications for social media based mental health interventions are inferred.

NOTE | Introducing the Ambivalent Socialiser

Bernd Ploderer, Wally Smith, Steve Howard, Jon Pearce, *The University of Melbourne, Australia*
Ron Borland, *Cancer Council Victoria, Australia*

Describes four approaches to introduce sociality to people who are simultaneously keen but also reluctant to participate in social media. Can assist designers of persuasive technology to utilise social influence.

NOTE | Twitter and the Development of an Audience: Those Who Stay on Topic Thrive!

Yi-Chia Wang, Robert Kraut, *Carnegie Mellon University, USA*

Describes a longitudinal study examining how initial topical focus influences communities’ ability to attract a critical mass. Can assist in understanding the development of online social networking structures.

■ PANEL | BALLROOM F

HUNTING FOR FAIL WHALES: LESSONS FROM DEVIANCE AND FAILURE IN SOCIAL COMPUTING

PANELISTS

Michael Bernstein, *Massachusetts Institute of Technology, USA*
Michael Conover, *Indiana University, USA*
Benjamin Mako Hill, Andres Monroy-Hernandez, *Massachusetts Institute of Technology, USA*
Brian Keegan, *Northwestern University, USA*
Aaron Shaw, *University of California, Berkeley, USA*
Sarita Yardi, *Georgia Tech, USA*
R.Stuart Geiger, *University of California, Berkeley, USA*
Amy Bruckman, *Georgia Tech, USA*

This panel discusses how social behaviors like theft, anonymity, deviance, and polarization contribute to both the failure and success in diverse online communities.

■ TECHNICAL PRESENTATIONS | BALLROOM G
PERFORMATIVE EMERGENCY SIMULATION

SESSION CHAIR: Olav W. Bertelsen, *Aarhus University, Denmark*

ToCHI | The Team Coordination Game: Zero-Fidelity Simulation Abstracted from Emergency Response Practice

Zachary O. Toups, *Texas Center for Applied Technology, USA*
 Andruid Kerne, William A. Hamilton, *Texas A&M University, USA*

Zero-fidelity simulation develops and invokes the principle of abstraction, focusing on human-information and human-human transfers of meaning, to derive design from work practice.

PAPER | "Act Natural": Instructions, Compliance and Accountability in Ambulatory Experiences

Peter Tolmie, Steve Benford, Martin Flintham, Patrick Brundell, *University of Nottingham, UK*
 Matt Adams, Nicholas Tandavanti, Ju Row Far, *Blast Theory, UK*
 Gabriella Giannachi, *The University of Exeter*

This paper presents an ethnographic study of instruction compliance in an ambulatory experience. Four levels of compliance are uncovered of broad relevance to instruction design.

PAPER | Supporting Improvisation Work in Inter-organizational Crisis Management

Benedikt Ley, Volkmar Pipek, Christian Reuter,
 Torben Wiedenhofer, *University of Siegen, Germany*

We present an empirical study about the improvisation work during medium to large power outages in Germany. We examined the cooperation of firefighters, police, public administration, electricity providers and citizens.

ToCHI | Supporting Knowledge Sharing and Activity Awareness in Distributed Emergency Management Planning: A Design Research Project

Gregorio Convertino, *Xerox Research Center Europe, France*
 Helena Mentis, *Microsoft Research, Cambridge, UK*
 Aleksandra Slavkovic, Mary Beth Rosson, John Carroll,
The Pennsylvania State University, USA

Design research project on knowledge sharing and activity awareness in distributed emergency management planning. Discusses how the designs enhanced aspects of distributed group performance, in some respects beyond face-to-face groups.

■ TECHNICAL PRESENTATIONS | 12AB
THE TOOLS OF THE TRADE

SESSION CHAIR: Jennifer Thom-Santelli, *IBM Research, USA*

PAPER | A Hybrid Mass Participation Approach to Mobile Software Trials

Alistair Morrison, Donald McMillan, *University of Glasgow, UK*
 Stuart Reeves, *University of Nottingham, UK*
 Scott Sherwood, Matthew Chalmers, *University of Glasgow, UK*

Describes methodology for combining simultaneous 'app store' style mobile software trial with local deployment. Allows for explanation of observed behaviour, verification to prevent misleading findings and more solid ethical practice.

PAPER | "Yours is Better!" Participant Response Bias in HCI

Nicola Dell, *University of Washington, USA*
 Vidya Vaidyanathan, *San Jose State University, USA*
 Indrani Medhi, Edward Cutrell, William Thies, *Microsoft Research India, India*

Interviewer demand characteristics can lead to serious experimental biases in HCI. Our study in Bangalore, India shows that researchers should expect significant response biases, especially when interacting with underprivileged populations.

PAPER | Digital Pen and Paper Practices in Observational Research

Nadir Weibel, Adam Fouse, Colleen Emmenegger, Whitney Friedman,
 Edwin Hutchins, James Hollan, *University of California, San Diego, USA*

We present digital pen and paper practices and their integration with ChronoViz, documenting the co-evolution of notetaking and system features as participants used the tool during an 18-month field deployment.

PAPER | User See, User Point: Gaze and Cursor Alignment in Web Search

Jeff Huang, *University of Washington, USA*
 Ryen White, *Microsoft Research, UK*
 Georg Buscher, *Microsoft Bing, USA*

Describes a lab study of alignment in eye-gaze and mouse cursor positions in Web search. Studies when gaze and cursor are aligned, and presents a model for predicting visual attention.

■ TECHNICAL PRESENTATIONS | 16AB

NEEDLE IN THE HAYSTACK

SESSION CHAIR: Mark Dunlop, *University of Strathclyde, UK*

PAPER | Representing “too small to see” as “too small to see” with Temporal Representation

Minyoung Song, Chris Quintana, *University of Michigan, USA*

This study assessed how the interactions with a temporal representation with different supporting modalities can alter the way learners think about the sizes that are too small to see.

PAPER | The Case of the Missed Icon: Change Blindness on Mobile Devices

Thomas Davies, Ashweeni Beeharee, *University College London, UK*

Presents evidence that change blindness occurs on small displays and is affected by interface designs. Can assist mobile application developers in improving the delivery of information through visual changes.

PAPER | The Bohemian Bookshelf: Supporting Serendipitous Book Discoveries through Information Visualization

Alice Thudt, *University of Munich, Germany*
Uta Hinrichs, Sheelagh Carpendale, *University of Calgary, Canada*

This paper explores information visualizations as a means to support serendipity based on the case study of the Bohemian Bookshelf, a visualization that was designed to support serendipitous book discoveries.

PAPER | Reactive Information Foraging: An Empirical Investigation of Theory-Based Recommender Systems for Programmers

David Piorkowski, *Oregon State University, USA*
Scott Fleming, *University of Memphis, USA*
Christopher Scaffidi, Christopher Bogart, Margaret Burnett,
Oregon State University, USA
Bonnie John, Rachel Bellamy, Calvin Swart, *IBM Research, USA*

Empirically investigates how programmers behave with different recommender systems based on Reactive Information Foraging Theory. Can assist tool builders in how to design recommender systems for programmers.

■ TECHNICAL PRESENTATIONS | 17AB

PUBLICS AND CIVIC VIRTUES

SESSION CHAIR: Ann Light, *Northumbria University, UK*

PAPER | Participation and Publics: Supporting Community Engagement



Christopher Le Dantec, *Georgia Tech, USA*

In the findings reported here, I continue to develop the framing of Deweyan publics as a way to scaffold an environmental approach to technology design in contexts with diverse stakeholders.

ToCHI | Towards a Framework of Publics: Re-encountering Media Sharing and its User

Silvia Lindtner, Judy Chen, Gillian Hayes, Paul Dourish, *University of California, Irvine, USA*

This paper proposes “publics” from media theory to stimulate reflection on prevailing interpretations of participation. Implications concern the role of digital media for collective practice and expression of values.

PAPER | Viewpoint: Empowering Communities with Situated Voting Devices

Nick Taylor, *Newcastle University, UK*
Justin Marshall, *University College Falmouth, UK*
Alicia Blum-Ross, *University of Surrey, UK*
John Mills, *University of Central Lancashire, UK*
Jon Rogers, *University of Dundee, UK*
Paul Egglestone, *University of Central Lancashire, UK*
David Frohlich, *University of Surrey, UK*
Peter Wright, Patrick Olivier, *Newcastle University, UK*

Describes a public voting device designed to help empower communities and inform decision making. Experiences from deploying this device are presented as guidelines for community voting technologies.

PAPER | Examining Technology that Supports Community Policing

Sheena Lewis, Dan A. Lewis, *Northwestern University, USA*

This paper investigates how citizens use technology to support community policing efforts. Our results suggest that technologies intended for crime prevention should be designed to support communication amongst citizens.

■ TECHNICAL PRESENTATIONS | 18AB
PROMOTING EDUCATIONAL OPPORTUNITY

SESSION CHAIR: Anthony Hornof, *University of Oregon, USA*

ToCHI | Signing on the Tactile Line: A Multimodal System for Teaching Handwriting to Blind Children

Beryl Plimmer, *University of Auckland, Auckland, New Zealand*
 Peter Reid, Rachel Blagojevic, *University of Auckland*
 Andrew Crossan, Stephen Brewster, *University of Glasgow, UK*

McSig is a multimodal system for teaching blind children to write and draw. Similar combinations of tactile, haptic, sound and stylus interaction could be useful for other non-visual interaction situations.

PAPER | Collaboration in Cognitive Tutor Use in Latin America: Field Study and Design Recommendations

Amy Ogan, *Carnegie Mellon University, USA*
 Erin Walker, *Arizona State University, USA*
 Ryan S.J.d. Baker, *Worcester Polytechnic Institute, USA*
 Genaro Rebolledo Mendez, *Universidad Veracruzana, Mexico*
 Maynor Jimenez Castro, *Universidad de Costa Rica, Costa Rica*
 Tania Laurentino, *SENAI Institute, Brazil*
 Adriana de Carvalho, *Carnegie Mellon University, USA*

Describes observations from a field study of children in three developing regions using adaptive educational technology. Presents guidelines for future development of technology that accounts for a collaborative use context.

CASE STUDY | Building a Case for M-learning in Africa: African Youth Perspectives on Education

Mokeira Masita-Mwangi, *Nokia Research Center, Kenya*
 Nancy Mwakaba, *Independent*
 Faith Ronoh-Boreh, Jussi Impio, *Nokia Research Center, Kenya*

The paper provides valuable insights into African youth in terms of education challenges and opportunities hence inspiring and informing research and development of technologies for Africa particularly for m-learning.

PAPER | Evaluating the Implicit Acquisition of Second Language Vocabulary Using a Live Wallpaper

David Dearman, *Nokia Research Center, Finland*
 Khai Truong, *University of Toronto, Canada*

Using a novel language learning interfaces (called Vocabulary Wallpaper) we explore if second language vocabulary can be implicitly acquired through a user's explicit interactions with her mobile phone.

■ TECHNICAL PRESENTATIONS | 18CD
INTERFACES FOR HEALTH & WELL BEING

SESSION CHAIR: Ian Li, *Carnegie Mellon University, USA*

PAPER | ShutEye: Encouraging Awareness of Healthy Sleep Recommendations with a Mobile, Peripheral Display

Jared Bauer, Sunny Consolvo, *University of Washington, USA*
 Benjamin Greenstein, *Google, USA*
 Jonathan Schooler, Eric Wu, Nathaniel F Watson, Julie Kientz, *University of Washington, USA*

Describes a field study of an application for mobile phones that uses a peripheral display to promote healthy sleep habits. Can help designers of mobile applications for behavioral awareness.

PAPER | Using Mobile Phones to Present Medical Information to Hospital Patients

Laura Pfeifer Vardoulakis, *Northeastern University, USA*
 Amy Karlson, Dan Morris, Greg Smith, *Microsoft Research, UK*
 Justin Gatewood, *MedStar Institute for Innovation, USA*
 Desney Tan, *Microsoft Research, UK*

We provided 25 emergency department patients with a mobile phone interface to near-real-time data about their care. Our study indicates that this is a promising approach to improving patient awareness.

PAPER | Engagement with Online Mental Health Interventions: An Exploratory Clinical Study of a Treatment for Depression

Gavin Doherty, *Trinity College Dublin, Ireland*
 David Coyle, *University of Bristol, UK*
 John Sharry, *Mater Misericordiae University Hospital, Ireland*

A clinical study of an online intervention for depression designed to maximise client engagement using a range of strategies. Yielded high user engagement and clinically significant improvements in depression scores.

PAPER | Best Intentions: Health Monitoring Technology and Children

Tammy Toscos, Kay Connelly, *Indiana University, USA*
 Yvonne Rogers, *University College London, UK*

Presents suggestions for development of health monitoring technology intended to enhance self-care in children without creating parent-child conflict. Provides designers an understanding of the impact of emotional response to technology.



■ TECHNICAL PRESENTATIONS | 19AB

CROWDSOURCING AND PEER PRODUCTION I

SESSION CHAIR: Mira Dontcheva, *Adobe Advanced Technology Labs, USA*

PAPER | Communitysourcing: Engaging Local Crowds to Perform Expert Work Via Physical Kiosks 

Kurtis Heimerl, Brian Gawalt, Kuang Chen, Tapan Parikh, Björn Hartmann, *University of California, Berkeley, USA*

Introduces communitysourcing: the use of physical kiosks to target existing crowds of expert workers with specific large-volume microtasks. Demonstrates through a deployment that communitysourcing can successfully elicit high-quality expert work.

PAPER | LemonAid: Selection-Based Crowdsourced Contextual Help for Web Applications

Parmit K. Chilana, Andrew J Ko, Jacob O Wobbrock, *University of Washington, USA*

We present LemonAid, a new approach to help that allows users to find previously asked questions and answers by selecting a label, widget, or image within the user interface.

PAPER | Is This What You Meant? Promoting Listening on the Web with Reflect

Travis Kriplean, Michael Toomim, Jonathan Morgan, Alan Borning, Andrew Ko, *University of Washington, USA*

Observes that listening is under-supported in web interfaces, explores the consequences, and contributes a novel design illustrating listening support. Field deployment on Slashdot establishes potential of this design direction.

PAPER | #EpicPlay: Selecting Video Highlights for Sporting Events using Twitter

Anthony Tang, Sebastian Boring, *University of Calgary, Canada*

Explores differences between crowd-sourced (through Twitter) video highlights of broadcast sports compared to nightly sportscast highlight reels. Illustrates utility of separating home and away tweets.

■ SPECIAL INTEREST GROUP | 11B

CHI 2012 SUSTAINABILITY COMMUNITY INVITED SIG: INVENTORY OF ISSUES AND OPPORTUNITIES

ORGANIZERS

Eli Blevis, *Indiana University, USA*
Daniela Busse, *Samsung Research, USA*
Samuel Mann, *Otago Polytechnic, New Zealand*
Yue Pan, *Indiana University, USA*
John Thomas, *IBM T.J. Watson Research Center, USA*

This year's CHI Sustainability Community's SIG is designed to broaden participation and collect an inventory of issues and opportunities to broaden HCI's role in securing a sustainable future.

**SPECIAL EVENT
INTERACTIVITY SESSION
COMMONS (EXHIBIT HALL 4)
15:50-19:00 (OPENS AT BREAK)**

Interactivity is your chance to fully engage at a personal level by touching, squeezing, hearing or even smelling interactive visions for the future: they come as prototypes, demos, artworks, design experiences as well as inspirational technologies. Interactivity is also an alternative to the traditional textual format at CHI to disseminate advancements in the field. Interactivity promotes and provokes discussion about the role of technology by actively engaging attendees one-by-one.

There is a Permanent Collection (available throughout most of the conference) and a Limited Time Collection (available at a specific time on Tuesday and Wednesday). Presenters will be available to interact with attendees at specific times.

**SPECIAL EVENT
JOB FAIR
COMMONS (EXHIBIT HALL 4)
17:00–19:30**

CHI 2012 is featuring a Job Fair on Tuesday evening. Recruiters and job candidates are invited to take advantage of this key event. Representatives from recruiting organizations will be available during this time. Visit the Recruiting Boards and designated exhibit booths throughout the conference to find out more about available positions.

**SPECIAL EVENT
CHI 2012
VIDEO PROGRAM ENCORE
BALLROOM D | 19:00**

The videos track is a forum for human-computer interaction that leaps off the page: vision videos, reflective pieces, humor, novel interfaces, studies and other moving images relevant to HCI. This year's selections premiered this morning. This is an encore performance culminating in the Golden Mouse award ceremony. Popcorn and drinks are available.



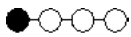
9 May 2012 | Wednesday

— = 10 minutes (Note, short Case Study)
— = 15 minutes (alt.chi)
— = 20 minutes (Paper, ToCHI, long Case Study)

	8:30-9:20	9:30-10:50	11:30-12:50	14:30-15:50	16:30-17:50
Ballroom D	CHI Madness	Special Event Student Research Competition	Award Talk Baty Friedman SIGCHI Social Impact Award	Special Event Student Design Competition	Invited Panel Managing UX Teams: Insights from Executive Leaders
Ballroom E		Technical Presentations Outside the Box 	Technical Presentations Sensory Interaction Modalities 	Technical Presentations Dimensions of Sensory Interaction 	Technical Presentations Morphing & Tracking & Stacking: 3D Interaction
Ballroom F		Panel Indy R&D: Doing HCI Research off the Beaten Path	Panel The Humanities and/in HCI	Panel Occupy CHI! Engaging U.S. Policymakers	Technical Presentations Social Computing: Business & Beyond
Ballroom G		Technical Presentations Sensing + Sensible Interaction 	Technical Presentations Old Mouse, New Tricks: Desktop Interfaces	Technical Presentations Phone Fun: Extending Mobile Interaction	Technical Presentations Programming, Performance, and Sense Making
12AB		Technical Presentations Pasts + Futures 	Technical Presentations Search Interfaces	Technical Presentations Culture, Playfulness, and Creativity 	Technical Presentations See Hear Speak: Redesigning I/O for Effectiveness
16AB		Technical Presentations Visualization + Visual Analysis	Technical Presentations Beyond Paper	Technical Presentations Usability Methods 	alt.chi Making Sense
17AB		Technical Presentations Mobile Computing and Interaction 	Technical Presentations Music 	Technical Presentations I Did That! Being in Control 	Technical Presentations Triple T: Touch, Tables, Tablets
18AB		Technical Presentations Future Design 	Technical Presentations ICT4D 	Technical Presentations Teaching with Games 	Technical Presentations Defying Environmental Behavior Changes
18CD		alt.chi Games and Play	Technical Presentations Movement-Based Gameplay 	Technical Presentations Health + Design 	Technical Presentations Learning with Children
19AB		Technical Presentations Time + Task: Managing Work Life	Technical Presentations Social Support and Collaboration 	Technical Presentations Check This Out: Recommender Systems 	Technical Presentations Design Theory & Practice
11A		Course 26 Interaction Design for Social ... <i>(See Page 19 for details)</i>	Course 26 (continued)	SIG End-User Programming	SIG Research and Education in Arabic Universities
11B		SIG RepliCHI - From Panel to New Venue	SIG Multitasking and Interruptions	SIG Reject Me: Peer Review and SIGCHI	Invited SIG Engineering Community The Role of Engineering Work in CHI
13A		Course 24 Choice and Decision Making for... <i>(See Page 19 for details)</i>	Course 24 (continued)	Course 27 Card Sorting for Navigation Design <i>(See Page 19 for details)</i>	Course 27 (continued)
13B		Course 22 Advanced R&D for Sustainability <i>(See Page 19 for details)</i>	Course 22 (continued)	Course 30 Multimodal Detection of Affective ... <i>(See Page 19 for details)</i>	Course 30 (continued)
14		Course 23 Agile UX Method Adaptation ... <i>(See Page 19 for details)</i>	Course 23 (continued)	Course 28 Empirical Research Methods for HCI <i>(See Page 19 for details)</i>	Course 28 (continued)
15		Course 25 Designing What to Design: a Task ... <i>(See Page 19 for details)</i>	Course 25 (continued)	Course 29 Hands-Free Interfaces: The Myths... <i>(See Page 19 for details)</i>	Course 31 Designing for "Cool": Making ... <i>(See Page 19 for details)</i>

Technical Presentations include Paper, Note, Case Study and ToCHI presentations

Exhibits	Interactivity	Posters	Special Events
Commons (Exhibit Hall 4) 10:50-17:00	Permanent Collection 10:50-19:00 Limited Time Collection 12:50-14:30 Commons (Exhibit Hall 4)	Doctoral Consortium, Student Design, Student Research, Workshops Commons (Exhibit Hall 4)	Interact with Poster Authors Commons (Exhibit Hall 4) 10:50-11:30 Joint Hospitality Reception Bob Bullock Texas State History Museum Busing available 18:30-20:30



CHI MADNESS | BALLROOM D

8:30-9:20

SESSION CHAIRS:

Paul André, *Carnegie Mellon University*
Petra Sundström, *Salzburg University*

CHI Madness returns to give everyone a lightning speed overview of the day's program.

■ **STUDENT RESEARCH COMPETITION | BALLROOM D**

FINALIST PRESENTATIONS

Finalists in the competition will present their research followed by brief questions and answers with the judges. Winners will be announced during the closing plenary.

■ **TECHNICAL PRESENTATIONS | BALLROOM E**

OUTSIDE THE BOX

SESSION CHAIR: Shahram Izadi, *Microsoft Research, USA*

PAPER | Unlocking the Expressivity of Point Lights



Chris Harrison, John Horstman, *Carnegie Mellon University, USA*
Gary Hsieh, *Michigan State University, USA*
Scott Hudson, *Carnegie Mellon University, USA*

Small lights (e.g., LEDs) are used as indicators in a wide variety of devices. Although exceedingly simple in their output, varying light intensity over time, their design space can be rich.

PAPER | Virtual Projection: Exploring Optical Projection as a Metaphor for Multi-Device Interaction

Dominikus Baur, *University of Munich LMU, Germany*
Sebastian Boring, *University of Calgary, Canada*
Steven Feiner, *Columbia University, USA*

Describes the concept of virtualizing optical projections as a metaphor for interacting between handhelds and stationary displays. We present characteristics, implementation and evaluation of such virtual projections.

PAPER | Creating and Using Interactive Narratives: Reading and Writing Branching Comics

Daniel Andrews, Chris Baber, *University of Birmingham, UK*
Sergey Efremov, Mikhail Komarov, *Moscow State Institute of Electronics and Mathematics (Technical University), Russia*

Describes the design and development of a novel form of interactive, multi-touch comics, which can facilitate the authoring of, and engagement with, interactive narratives.

NOTE | TimeBlocks: "Mom, Can I Have Another Block of Time?"

Eiji Hayashi, Martina Rau, Zhe Han Neo, Nastasha Tan, Sriram Ramasubramanian, Eric Paulos, *Carnegie Mellon University, USA*

Presents the design, development, and evaluation of TimeBlocks. TimeBlocks is a novel tangible, playful object to facilitate communication about time between young children and adults.

CASE STUDY | Canvas Presentations in the Wild

Leonhard Lichtschlag, Thomas Hess, Thorsten Karrer, Jan Borchers, *RWTH Aachen University, Germany*

Examines evolving layout strategies in publicly available canvas presentations. Finds that the benefits of this format previously demonstrated in the lab setting can also be observed in real-life presentations.

■ **PANEL | BALLROOM F**

INDY R&D: DOING HCI RESEARCH OFF THE BEATEN PATH

PANELISTS

Amanda Williams, *Wyld Collective Ltd, Canada*
Johanna Brewer, *frēstyl, USA*
Alicia Gibb, *NYCResistor, USA*
Eric Wilhelm, *Instructables, USA*
Hugh Forrest, *SXSW, USA*

Indy R&D is an accelerating practice combining real-world concerns with academic curiosity. We provide practical tips to help decide if it's right for you, and help you get started.

■ TECHNICAL PRESENTATIONS | BALLROOM G**SENSING + SENSIBLE INTERACTION****SESSION CHAIR:** Michael Haller, *Media Interaction Lab, Austria***PAPER | Rewarding the Original: Explorations in Joint User-sensor Motion Spaces** John Williamson, Roderick Murray-Smith, *University of Glasgow, UK*

Describes a general technique to identify a set of communicative motions for a given input system by rewarding users for performing novel behaviours. Provides a systematic tool for designing gestures.

PAPER | Vignette: Interactive Texture Design and Manipulation with Freeform Gestures for Pen-and-Ink IllustrationRubaiat Habib Kazi, *National University of Singapore, Singapore*
Takeo Igarashi, *JST ERATO Igarashi Design Interface Project*
Shengdong Zhao, *National University of Singapore, Singapore*
Richard Davis, *Singapore Management University, Singapore*

Presents a sketch-based application for interactive pen-and-ink illustration. The novel interaction and workflow enables to create a wide range of paintings easily and quickly, along with preserving personal artistic style.

PAPER | Instructing People for Training Gestural Interactive SystemsSimon Fothergill, *University of Cambridge, UK*
Helena Mentis, Pushmeet Kohli, Sebastian Nowozin,
Microsoft Research, UK

Findings regarding the affect of kinematic instruction modality on training gestural interactive systems. Guideline for developers to collect training data for gesture recognition systems that achieve correctness and coverage.

NOTE | Making Gestural Input from Arm-Worn Inertial Sensors More PracticalLouis Kratz, *Drexel University, USA*
Daniel Morris, T. Scott Saponas, *Microsoft Research, UK*

Gesture recognition requires complex computation and tedious user-training. We present an efficient recognition method that achieves accurate recognition with only a single calibration gesture from each user.

NOTE | Clipoid: An Augmentable Short-Distance Wireless Toolkit for 'Accidentally Smart Home' EnvironmentsJong-bum Woo, Youn-kyung Lim, *Korea Advanced Institute of Science and Technology, Republic of Korea*

Our study is to understand how users utilize an augmentable wireless technology toolkit to upgrade their home environment. It provides a new way of enabling an 'accidentally smart home' environment.

■ TECHNICAL PRESENTATIONS | 12AB**PASTS + FUTURES****SESSION CHAIR:** Siân Lindley, *Microsoft Research Cambridge, UK***PAPER | Envisioning Ubiquitous Computing** Stuart Reeves, *University of Nottingham, UK*

Examines technological visions of the future and the role of 'envisioning' within ubicomp and HCI communities. Critiques these envisionings and recommends changes in ways we read, interpret and use them.

PAPER | Steampunk as Design Fiction Joshua Tanenbaum, Karen Tanenbaum, Ron Wakkary,
Simon Fraser University, Canada

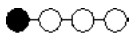
A critical look at Steampunk through the lenses of design fiction, DIY, and appropriation. Provides a new perspective on design strategies for HCI rooted in questions of ethics, values, and identity.

PAPER | Revisiting the Jacquard Loom: Threads of History and Current Patterns in HCI Ylva Fernaeus, *Mobile Life Centre, KTH, Sweden*
Martin Jonsson, *Södertörn University, Sweden*
Jakob Tholander, *Mobile Life Centre, Stockholm University, Sweden*

We describe and reflect on the workings of the Jacquard loom from the perspective of contemporary HCI: materiality, graspability, full body interaction, sustainability and age.

CASE STUDY | Lost and Found: Lessons Learned from a Design RetrospectiveYolanda Reimer, *University of Montana, USA*

Case study reflecting on the long-term design of an information management system for students. Can help designers understand the impact of multiple influences on the overall transformation of a system.



■ TECHNICAL PRESENTATIONS | 16AB

VISUALIZATION + VISUAL ANALYSIS

SESSION CHAIR: Luciano Gamberini, *University of Padova, Italy*

NOTE | Analysis Within and Between Graphs: Observed User Strategies in Immunobiology Visualization

Caroline Ziemkiewicz, Steven Gomez, David Laidlaw, *Brown University, USA*

Focused task analysis of a real-world scientific visualization process in the immunology domain. Suggests a classification of strategies in this domain and how this classification can be used to guide design.

NOTE | Understanding the Verbal Language and Structure of End-User Descriptions of Data Visualizations

Ronald Metoyer, *Oregon State University, USA*
Bongshin Lee, Nathalie Henry Riche, Mary Czerwinski, *Microsoft Research, UK*

Exploratory study of the verbal language employed by end users in describing data visualizations. Can assist designers of interfaces (languages, APIs, GUIs) for data visualization.

PAPER | GraphTrail: Analyzing Large Multivariate, Heterogeneous Networks while Supporting Exploration History

Cody Dunne, Nathalie Henry Riche, Bongshin Lee, *Microsoft Research, UK*
Ronald Metoyer, *Oregon State University, USA*
George Robertson, *Microsoft Research, UK*

Visualization design for exploring large multivariate, heterogeneous networks using attribute aggregation while integrating users' exploration history directly in the workspace. This improves exploration recall and sharing of analyses with others.

PAPER | Trust Me, I'm Partially Right: Incremental Visualization Lets Analysts Explore Large Datasets Faster

Danyel Fisher, *Microsoft Research, UK*
Igor Popov, *University of Southampton, UK*
Steven Drucker, *Microsoft Research, UK*
m.c. schraefel, *University of Southampton, UK*

We contribute a methodology for simulating aggregate queries against large data back-ends for researchers to explore interactions; and observations of expert analysts interacting with approximate queries.

CASE STUDY | Interactive Exploration of Geospatial Network Visualization

Till Nagel, *University of Applied Sciences Potsdam, Germany*
Erik Duval, Andrew Vande Moere, *KU Leuven, Belgium*

Case study describing the design of a geospatial network visualization of scientific collaboration for a multitouch tabletop. Can help designers adapting prototypes by opportunistically demonstrating in live settings.

■ TECHNICAL PRESENTATIONS | 17AB

MOBILE COMPUTING AND INTERACTION

SESSION CHAIR: Daniel Fallman, *Umea University, Sweden*

NOTE | Drawing the City: Differing Perceptions of the Urban Environment

Frank Bentley, *Motorola Mobility, USA*
Henriette Cramer, *Mobile Life Centre, Stockholm University, Sweden*
William Hamilton, *Texas A&M University, USA*
Santosh Basapur, *Motorola Mobility, USA*

We provide an updated study of the Milgram Mental Maps experiment, also considering demographic and tech-use attributes. Useful to those working on mobile LBS and Urban Computing services.

NOTE | Characterizing Local Interests and Local Knowledge

Ryen White, *Microsoft Research, UK*
Georg Buscher, *Microsoft Bing, USA*

Characterizes the search-related interests of locals and non-locals, and given shared interests, analyzes the venues that they visit. Can inform the use of local knowledge for search support, including personalization.

CASE STUDY | Mobile Service Distribution From the End-User Perspective - The Survey Study on Recommendation Practices

Zeynep Ahmet, *Mobile Life @ Interactive Institute, Sweden*
Kaisa Väänänen-Vainio-Mattila, *Tampere University of Technology, Finland*

A presentation on findings from a study focused on recommendation practices of users of mobile services, including motivations, means, context and types of services recommended to others.

PAPER | Augmenting Spatial Skills with Mobile Devices

Doug Boari, Mike Fraser, *University of Bristol, UK*
 Danae Stanton Fraser, *University of Bath, UK*
 Kirsten Cater, *University of Bristol, UK*

Shows efficiency of mental rotation over touch or tilt techniques on smartphones and tablet PCs. Describes implications for designing mobile applications to enhance spatial skills.

PAPER | The Normal Natural Troubles of Driving with GPS

Barry Brown, *Mobile Life Centre, Stockholm University, Sweden*
 Eric Laurier, *University of Edinburgh, UK*

Presents a video analysis study of driving using GPS navigation systems in natural settings. The paper argues for a driving with GPS as an active process and not as 'docile driving'.

■ TECHNICAL PRESENTATIONS | 18AB**FUTURE DESIGN**

SESSION CHAIR: Orit Shaer, *Wellesley College, USA*

CASE STUDY | Researching the User Experience for Connected TV - A Case Study

Vinoba Vinayagamoorthy, Penelope Allen, Matt Hammond,
 Michael Evans, *British Broadcasting Corporation, UK*

Case study presenting a variety of projects that highlight UX challenges and opportunities around internet-connected television. Can inspire developers to exploit this emerging platform to create novel experiences.

PAPER | Implicit Imitation in Social Tagging: Familiarity and Semantic Reconstruction

Paul Seitlinger, *Graz University of Technology, Austria*
 Tobias Ley, *Tallinn University, Estonia*

Presents a multinomial model and experiment formalizing cognitive processes in social imitation in tagging. Allows researchers to differentiate implicit and explicit imitation and to assess the impact of different design choices.

PAPER | Annotating BI Visualization Dashboards: Needs & Challenges

Micheline Elias, *Ecole Centrale Paris, France*
 Anastasia Bezerianos, *INRIA, France*

Presents the user-centered design of a visualization dashboard, which supports context aware and multi-chart annotations applied across visualizations and data dimension levels. Discusses challenges in annotating dynamic and hierarchical data.

NOTE | Choosing to Interleave: Human Error and Information Access Cost

Jonathan Back, Anna Cox, Duncan Brumby, *University College London, UK*

Empirical study demonstrating that the cost of accessing information can impact on multitasking performance. Choosing to interleave the programming of medical devices can result in more omission errors.

■ ALT.CHI | 18CD**ALT.CHI: GAMES AND PLAY**

SESSION CHAIR: Florian 'Floyd' Mueller, *RMIT University, Australia*

alt.chi | Knowing, Not Doing: Modalities of Gameplay Expertise in World of Warcraft Addons

Victoria McArthur, Tamara Peyton, Jennifer Jenson,
 Nicholas Taylor, *York University, Canada*
 Suzanne de Castell, *Simon Fraser University, Canada*

We present a categorization of WoW addons using a multifaceted expertise framework, proposing a theoretically-grounded and empirically-driven model for conceptualizing the ways that addons extend different expressions of game-based ability.

alt.chi | hipDisk: Understanding the Value of Ungainly, Embodied, Performative, Fun

danielle wilde, *independent practitioner*

hipDisk is an ungainly musical body extension that prompts awkward engagement to facilitate embodied learning. The research champions process-driven, performative research methodologies, epistemologically different to qualitative and quantitative approaches.

alt.chi | Exploring Mischief and Mayhem in Social Computing or: How We Learned to Stop Worrying and Love the Trolls

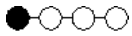
Ben Kirman, Conor Lineham, Shaun Lawson, *University of Lincoln, UK*

Explores the role of mischief in creating humour and novel experiences in social computing systems. Framing mischief as appropriation, we argue for the value in borderline social acceptability.

alt.chi | Virtual Postcards: Multimodal Stories of Online Play

Nick Taylor, Victoria McArthur, Jennifer Jenson, *York University, Canada*

This paper documents a multimodal data collection tool developed for research on online videogames. The 'virtual travelogue' breaks new methodological ground by letting players share visual archives of their gaming.



alt.chi | Interaction Design Patterns for Multi-touch Tabletop Collaborative Games

Wooi Boon Goh, Wei Shou, Jacquelyn Tan, *Nanyang Technological University, Singapore*
Jackson Lum, *Institute for Infocomm Research, Singapore*

Describes interaction design patterns on multi-touch tabletops that are observed to be effective in facilitating positive social interaction among children during collaborative game play.

■ TECHNICAL PRESENTATIONS | 19AB

TIME + TASK: MANAGING WORK LIFE

SESSION CHAIR: Laura Dabbish, *Carnegie Mellon University, USA*

PAPER | "I'd Never Get Out of this !?%# Office" Redesigning Time Management for the Enterprise

Casey Dugan, Werner Geyer, Michael Muller, *IBM, USA*
Abel N. Valente, *IBM Argentina, Argentina*
Katherine James, *Carnegie Mellon University, USA*
Steve Levy, Li-Te Cheng, Elizabeth Daly, Beth Brownholtz, *IBM, USA*

We propose improving enterprise time management by providing users interactive visualizations of their time. Through an interview study we determine the data and value of specific visualizations, and design implications.

CASE STUDY | A Look into Some Practices behind Microsoft UX Management

Agnieszka (Aga) Szostek Matysiak, *ICACS, SWPS, Poland*

This study aimed to acquire insights about UX management practices at Microsoft. These practices could serve as inspiration helping managers to run their teams and propagate UX values within organization.

PAPER | Do You See That I See? Effects of Perceived Visibility on Awareness Checking Behavior

Jeremy Birnholtz, Nanyi Bi, Susan Fussell, *Cornell University, USA*

Experimental study exploring effects of available time and notifying observed parties on gathering awareness information. Provides a framework for understanding these behaviors, and results suggesting urgency and notification reduce gathering.

ToCHI | Measuring Multitasking Behavior with Activity-Based Metrics

Raquel Benbunan-Fich, *Baruch College, City University of New York, USA*
Rachel Adler, Tamilla Mavlanova, *CUNY, USA*

Proposed multitasking metrics to establish a conceptual foundation for future multitasking studies. Understanding the extent to which multitasking occurs can assist designers in improving applications that are used simultaneously.

■ SPECIAL INTEREST GROUP | 11B

REPLICHI SIG – FROM A PANEL TO A NEW SUBMISSION VENUE FOR REPLICATION

ORGANIZERS

Max Wilson, *University of Nottingham, UK*
Wendy Mackay, *INRIA, France*
Ed Chi, *Google Inc., USA*
Michael Bernstein, *Massachusetts Institute of Technology, USA*
Jeffrey Nichols, *IBM Almaden, USA*

For CHI2013, we're proposing a new venue that focuses on replicating, confirming, and challenging published HCI findings. This SIG will discuss the aims and format of repliCHI-2013.

HIGHLIGHT ON POSTERS BREAK

COMMONS (EXHIBIT HALL 4) | 10:50-11:30

Posters are located in the Commons (Exhibit Hall 4, Level 1). Poster authors are scheduled to stand by their posters at this time. Please visit the posters each day to see all of the exciting work being done and discuss new ideas with poster presenters.

Doctoral Consortium (DC01 - DC14)
Student Design Competition (SDC01 - SDC15)
Student Research Competition (SRC01 - SRC10)
Workshops

INTERACTIVITY | 10:50-11:30

The Interactivity Permanent Collection will be open during this break in the Commons (Exhibit Hall 4, Level 1). Presenters will be present.

■ AWARD TALK | BALLROOM D
**SIGCHI SOCIAL IMPACT AWARD
Something of Value**

Batya Friedman, *University of Washington, USA*

Tools and technology do not stand apart from human values. Moreover, our tools, interactions, and infrastructures are tied intimately to human flourishing. In this SIGCHI Social Impact Award talk, I seek to inspire the CHI community to engage with socially significant issues. This talk will be a combination of personal reflections on building theory and method over a 20-year period, and a synthesis of core framings in value sensitive design. Along the way, I will dwell on method, examining roughly a dozen value sensitive design methods that taken as a whole can help researchers and designers account for human values in their technical endeavors. In so doing, I will expand the HCI design space beyond technical devices to infrastructure, policy, and social norms. Key to my discussion will be attention to the challenges of scale – across time, geography, cultures, and stakeholders. From method, I will make the turn to multi-lifespan information system design and concentrate my talk on the first project under that program – the Voices from the Rwanda Tribunal which supports peace-building and reconciliation in the aftermath of widespread violence. I will close this talk with openings: open questions in value sensitive and multi-lifespan information system design; and, more broadly, open challenges for the HCI community as we imagine the tools, interactions, and infrastructures that will underlie the futures of societies. We set our sights on progress, not perfection.

About Batya Friedman: Batya Friedman is a Professor in the Information School, Adjunct Professor in the Department of Computer Science, and Adjunct Professor in the Department of Human-Centered Design and Engineering at the University of Washington where she directs the Value Sensitive Design Research Lab. Batya pioneered value sensitive design (VSD), an approach to account for human values in the design of information systems. First developed in human-computer interaction, VSD has since been used in information management, human-robotic interaction, computer security, civil engineering, applied philosophy, and land use and transportation. Her work has focused on a wide range of values, some include privacy in public, trust, freedom from bias, moral agency, sustainability, safety, calmness, freedom of expression, and human dignity; along with a range of technologies such as web browsers, urban simulation, robotics, open source tools, mobile computing, implantable medical devices, computer security, ubiquitous computing and computing infrastructure. She is currently working on multi-lifespan information system design and on methods for envisioning – new ideas for leveraging information systems to shape our futures. Voices from the Rwanda Tribunal is an early project in this multi-lifespan information system design program. Batya received both her B.A. and Ph.D. from the University of California at Berkeley.

■ TECHNICAL PRESENTATIONS | BALLROOM E
SENSORY INTERACTION MODALITIES

SESSION CHAIR: Daniel M. Russell, *Google, USA*

PAPER | Humantenna: Using the Body as an Antenna for Real-Time Whole-Body Interaction


Gabe Cohn, *University of Washington, USA*
Daniel Morris, *Microsoft Research, UK*
Shwetak Patel, *University of Washington, USA*
Desney Tan, *Microsoft Research, UK*

Extends approach of using the human body as an antenna for sensing whole-body gestures. Demonstrates robust real-time gesture recognition and promising results for robust location classification within a building.

NOTE | SoundWave: Using the Doppler Effect to Sense Gestures

Sidhant Gupta, *University of Washington, USA*
Daniel Morris, *Microsoft Research, UK*
Shwetak Patel, *University of Washington, USA*
Desney Tan, *Microsoft Research, UK*

Describes SoundWave, which leverages the speaker and microphone already embedded in commodity devices to sense in-air gestures around the device. This allows interaction with devices in novel and rich ways.

NOTE | Your Phone or Mine? Fusing Body, Touch and Device Sensing for Multi-User Device-Display Interaction

Mahsan Rofouei, *University of California, Los Angeles, USA*
Andrew Wilson, A.J. Brush, Stewart Tansley, *Microsoft Research, UK*

Describes a technique for associating multi-touch interactions to individual users and their accelerometer-equipped mobile devices. Allows for more seamless device-display multi-user interactions including personalization, access control, and score-keeping.

PAPER | IllumiShare: Sharing Any Surface

Sasa Junuzovic, Kori Inkpen, Tom Blank, Anoop Gupta, *Microsoft Research, UK*

A camera-projector device called IllumiShare that shares arbitrary objects and surfaces without visual echo is presented. Study of children's remote play shows IllumiShare provides natural and seamless interactions over distance.

NOTE | Rock-Paper-Fibers: Bringing Physical Affordance to Mobile Touch Devices

Frederik Rudeck, Patrick Baudisch, *Hasso Plattner Institute, Germany*

Bringing physical affordance to mobile touch devices by making the touch device deformable.



NOTE | Shake'n'Sense: Reducing Interference for Overlapping Structured Light Depth Cameras 

D. Alex Butler, Shahram Izadi, Otmar Hilliges, *Microsoft Research, UK*
David Molyneaux, *Lancaster University, UK*
Steve Hodges, *Microsoft Research, UK*
David Kim, *Newcastle University, UK*

New method for reducing interference when two structured light cameras overlap by only mechanical augmentation.

■ **PANEL | BALLROOM F**

THE HUMANITIES AND/IN HCI

PANELISTS

Jeffrey Bardzell, Shaowen Bardzell, *Indiana University, USA*
Carl DiSalvo, *Georgia Tech, USA*
William Gaver, *Goldsmiths, University of London, UK*
Phoebe Sengers, *Cornell University, USA*

In this panel, we explore the state of the art of humanist scholarship in HCI and consider its future trajectories.

■ **TECHNICAL PRESENTATIONS | BALLROOM G**

OLD MOUSE, NEW TRICKS: DESKTOP INTERFACES

SESSION CHAIR: Krzysztof Gajos, *Harvard University, United States*

PAPER | Augmenting the Scope of Interactions with Implicit and Explicit Graphical Structures

Raphael Hoarau, Stephane Conversy, *Université de Toulouse - ENAC/IRIT, France*

Discusses graphical interaction with structures, and with multiple objects through structures. Introduces two novel and consistent interactive tools: ManySpector, an enhanced inspector, and user-provided dependency links.

PAPER | Taming Wild Behavior: The Input Observer for Text Entry and Mouse Pointing Measures from Everyday Computer Use

Abigail Evans, Jacob Wobbrock, *University of Washington, USA*

Presents a tool that can measure text entry and mouse pointing performance from everyday computer use. Device makers, researchers, and assistive technology specialists may benefit from measures of everyday use.

PAPER | Dwell-and-Spring: Undo for Direct Manipulation

Caroline Appert, Olivier Chapuis, *Univ Paris-Sud, France*
Emmanuel Pietriga, *INRIA, France*

Presents Dwell-and-Spring a technique that uses the metaphor of springs to enable users to undo direct manipulations. Evaluation shows that users quickly adopt it as soon as discovered.

ToCHI | WindowScape: Lessons Learned from a Task Centric Window Manager

Craig Tashman, Keith Edwards, *Georgia Tech, USA*

Deployment study of a scaling window manager that supports organization and grouping. Also discusses design process, particularly including alternatives and tradeoffs.

■ **TECHNICAL PRESENTATIONS | 12AB**

SEARCH INTERFACES

SESSION CHAIR: Remco Chang, *Tufts University, USA*

PAPER | Best Faces Forward: A Large-scale Study of People Search in the Enterprise

Ido Guy, Sigalit Ur, Inbal Ronen, *IBM Research, USA*
Sara Weber, Tolga Oral, *IBM CIO's Office, USA*

We present Faces, an application built to allow effective large-scale people search in the enterprise, and its usage analysis within IBM along a time period of over 140 days.

PAPER | The Search Dashboard: How Reflection and Comparison Impact Search Behavior

Scott Bateman, *University of Saskatchewan, Canada*
Jaime Teevan, Ryen White, *Microsoft Research, UK*

Describes the design of a reflective interface for search. A 5-week study showed that after brief contact, users adopted new behavior. Provides clear next steps for improving the search experience.

PAPER | Building the Trail Best Traveled: Effects of Domain Knowledge on Web Search Trailblazing

Xiaojun Yuan, *State University of New York, USA*
Ryen White, *Microsoft Research, UK*

User study on the impact of domain knowledge on Web search trailblazing (creating URL sequences to help searchers). Can assist search engine designers understand the benefit from employing domain-expert trailblazers.

CASE STUDY | A Survey on Web Use: How People Access, Consume, Keep, and Organize Web Content

Seungyon Claire Lee, Eamonn O'Brien-Strain, Jerry Liu, Qian Lin, *Hewlett-Packard Laboratories, USA*

This survey contributes to the design of cloud content repository by exploring the relationship between content characteristics (contacted by passive delivery vs. active discovery) and behavior (access, consume, keep, organize).

■ TECHNICAL PRESENTATIONS | 16AB
BEYOND PAPER

SESSION CHAIR: Mikael B. Skov, *Aalborg University, Denmark*

PAPER | Successful Classroom Deployment of a Social Document Annotation System

Sacha Zyto, David Karger, *Massachusetts Institute of Technology, USA*

Mark Ackerman, *University of Michigan, USA*

Sanjoy Mahajan, *Olin College of Engineering, USA*

NB supports collaborative student annotation of online lecture notes. Our study of NB use shows its efficacy and demonstrates that the time for annotation systems has finally arrived.

CASE STUDY | Focusing Our Vision - The Process of Redesigning Adobe Acrobat

Liang-Cheng Lin, Craig Scull, Daniel Walsh, *Adobe Systems, USA*

Presents a design process of redesigning a legacy software with millions of users. Provides an insight into how user interface design and user testing are executed in the real world.

NOTE | Informal Information Gathering Techniques for Active Reading

Ken Hinckley, Xiaojun Bi, Michel Pahud, Bill Buxton, *Microsoft Research, UK*

Contributes informal information gathering techniques— that embrace both content consumption and content creation within the same workflow— for active reading with a prototype e-reader employing both multi-touch and pen input.

CASE STUDY | A Print Magazine on Any Screen: The Wired App Story

Jeremy Clark, Joel Brandt, *Adobe Systems, USA*

Reports on the design process behind the the digital reading experience developed by Adobe Systems for Wired Magazine.

NOTE | Toward a Theory of Interaction in Mobile Paper-Digital Ensembles

Felix Heinrichs, Daniel Schreiber, Jochen Huber, Max Mühlhäuser, *TU Darmstadt, Germany*

Empirically grounded theory of interaction in mobile paper-digital ensembles (pen, paper and mobile device). Can inform interaction design for this setting by explaining its specific characteristics.

■ TECHNICAL PRESENTATIONS | 17AB
MUSIC

SESSION CHAIR: Karyn Moffatt, *McGill University, Canada*

PAPER | Digging in the Crates: An Ethnographic Study of DJs' Work

Ahmed Ahmed, Steve Benford, andy crabtree, *University of Nottingham, UK*

Presents an analysis of how DJs collect, prepare, perform and promote music. Raises implications for technologies to support DJs and for studies of music consumption and sharing in other settings.

PAPER | Becoming-Sound: Affect and Assemblage in Improvisational Digital Music Making

Benjamin Swift, *Australian National University, Australia*

Affect and assemblage can help us understand the interaction between users and artefacts in interactive systems. This paper provides some theoretical background and shows its application in understanding collaborative creativity.

NOTE | Interactive Paper Substrates to Support Musical Creation

Jérémie Garcia, Theophanis Tsandilas, *INRIA, France*

Carlos Agon, *IRCAM, France*

Wendy Mackay, *INRIA, France*

Explores the design of typed paper components for manipulating musical data. Support layers and modules of data rearranged in time and space through tangible interactions with pen and paper.

NOTE | DiskPlay: In-Track Navigation on Turntables

Florian Heller, Jan Borchers, *RWTH Aachen University, Germany*

Design and initial evaluation of an augmented reality system for DJs. It shows how AR can be used to recreate individual features of a medium on a generic controller.

CASE STUDY | Vintage Radio Interface: Analog Control for Digital Collections


Mathieu Hopmann, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*

Mario Gutierrez, Frédéric Vexo, *Logitech Incubator, Switzerland*

Daniel Thalmann, *Ecole Polytechnique Fédérale de Lausanne, Switzerland*


Development and evaluation of an interface for navigating digital music collections based on a one-dimensional analog control and a data visualization inspired by old analog radios.



■ TECHNICAL PRESENTATIONS | 18AB

ICT4D

SESSION CHAIR: Brygg Ullmer, *Louisiana State University, USA*

CASE STUDY | In Dialogue: Methodological Insights on Doing HCI Research in Rwanda 

Samantha Merritt, *Indiana University, USA*
Abigail Durrant, Stuart Reeves, *University of Nottingham, UK*
David Kirk, *Newcastle University, UK*

Case study of research on memorialisation in post-genocide Rwanda, focussing on methodological challenges of working in a “transnational” context. Findings develop methodological insights with relevance to wider HCI audiences.

PAPER | Claim Mobile: When to Fail a Technology

Melissa Densmore, *University of California, Berkeley, USA*

Details the motivations and context for ‘failing’ Claim Mobile, a mobile application developed for a health-financing program in Uganda. Encourages long-term evaluation of HCI4D projects, and learning from failure.

PAPER | mClerk: Enabling Mobile Crowdsourcing in Developing Regions

Aakar Gupta, *University of Toronto, Canada*
William Thies, Edward Cutrell, *Microsoft Research India, India*
Ravin Balakrishnan, *University of Toronto, Canada*

Describes a new platform for crowdsourcing graphical tasks via SMS messages and studies its deployment in semi-urban India. Demonstrates that paid crowdsourcing can be feasible and viral in developing regions.

CASE STUDY | Using NFC Phones to Track Water Purification in Haiti 

Joseph ‘Jofish’ Kaye, *Nokia Research Center, Finland*
David Holstius, Edmund Seto, *University of California, Berkeley, USA*

Brittany Eddy, *Partners in Health, USA*
Michael Ritter, *Deep Springs International, Haiti*

This case study describes the decision-making process, the opportunities, and the difficulties of designing and rolling out a NFC-based system to help provide clean water in Haiti.

■ TECHNICAL PRESENTATIONS | 18CD

MOVEMENT-BASED GAMEPLAY

SESSION CHAIR: Shaun Kane, *University of Maryland Baltimore County, USA*

PAPER | Balancing Exertion Experiences 

Florian ‘Floyd’ Mueller, *RMIT University, Australia*
Frank Vetere, Martin Gibbs, *The University of Melbourne, Australia*
Darren Edge, *Microsoft Research Asia, China*
Stefan Agamanolis, *Akron Children’s Hospital, USA*
Jennifer Sheridan, *BigDog Interactive Ltd., UK*
Jeffrey Heer, *Stanford University, USA*

Presents guidelines from “Jogging over a Distance”, a mobile system used by jogging partners with different fitness levels between Europe and Australia. Aids designers of exertion games and sports apps.

PAPER | The Acute Cognitive Benefits of Casual Exergame Play

Yue Gao, Regan Mandryk, *University of Saskatchewan, Canada*

We designed a casual exergame, which when played for 10min yields exertion levels comparable to treadmill exercise and produces measurable cognitive improvements (concentration) over a sedentary version of the game.

PAPER | Full-Body Motion-Based Game Interaction for Older Adults

Kathrin Gerling, *University of Saskatchewan, Canada*
Ian Livingston, *Ubisoft Divertissements Inc., Canada*
Lennart Nacke, *UOIT, Canada*
Regan Mandryk, *University of Saskatchewan, Canada*

Case study describing the design of full-body motion-based games for older adults. Provides guidelines to inform work of designers and support the creation of accessible interaction paradigms for older adults.

CASE STUDY | Wii as Entertainment and Socialisation Aids for Mental and Social Health of the Elderly

Yin-Leng Theng, Puay Hoe Chua, Tan Phat Pham, *Nanyang Technological University, Singapore*

This study examines and discusses the effects of the Nintendo Wii games, examples of co-located games, as entertainment and socialization aids between the elderly and the youths.

■ TECHNICAL PRESENTATIONS | 19AB

SOCIAL SUPPORT AND COLLABORATION

SESSION CHAIR: Meredith Ringel Morris, *Microsoft Research, USA*

PAPER | Bridging Between Organizations and the Public: Volunteer Coordinators' Uneasy Relationship with Social Computing 

Amy Volda, Ellie Harmon, Ban Al-Ani, *University of California, Irvine, USA*

Describes a study of the social computing use of volunteer coordinators. Identifies challenges and opportunities for designing social computing technologies to bridge more effectively between the public and nonprofit sector.

PAPER | The Labor Practices of Service Mediation: A Study of the Work Practices of Food Assistance Outreach

Lynn Dombrowski, Amy Volda, Gillian R. Hayes, Melissa Mazmanian, *University of California, Irvine, USA*

Extends the construct of mediation to service systems through a study of e-government outreach work. Can help researchers understand how to enable access and use of services for low-resource populations.

PAPER | Socially Computed Scripts to Support Social Problem Solving Skills

Fatima Boujarwah, Gregory Abowd, Rosa Arriaga, *Georgia Tech, USA*

We describe an approach to using crowdsourcing to create models of complex social scenarios, and confirm that they may help an author create instructional modules for an individual with autism.

NOTE | Comparing Collaboration and Individual Personas for the Design and Evaluation of Collaboration Software

Tejinder Judge, *Google Inc., USA*
Tara Matthews, *IBM Almaden, USA*
Steve Whittaker, *University of California at Santa Cruz, USA*

Comparative study of individual vs. collaboration personas for a collaborative tool design and evaluation task. First step toward validating a new method for those designing and evaluating CSCW tools.

NOTE | TEROOS: A Wearable Avatar to Enhance Joint Activities



Tadakazu Kashiwabara, Hirotaka Osawa, *Keio University, Japan*
Kazuhiko Shinozawa, *ATR Intelligent Robotics and Communication Laboratories, Japan*
Michita Imai, *Keio University, Japan*

The note describes what communication style a wearable robot avatar offers to daily life situations. Two users can communicate by sharing their vision via the robot avatar.

■ SPECIAL INTEREST GROUP | 11B

MULTITASKING AND INTERRUPTIONS: A SIG ON BRIDGING THE GAP BETWEEN RESEARCH ON THE MICRO AND MACRO WORLDS

ORGANIZERS

Sandy Gould, Duncan Brumby, Anna Cox, *University College London, UK*
Victor Gonzalez, *Instituto Tecnológico Autónomo de México, Mexico*
Dario Salvucci, *Drexel University, USA*
Niels Taatgen, *University of Groningen, Netherlands*

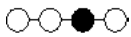
Research in interruptions/multitasking has considered the micro-world of perception and cognition; and the macro-world of organisations, systems and long-term planning. Can the two kinds of research be considered together?

LUNCH BREAK | 12:50-14:30

There are many restaurants available in the area. Concession stands will also be open during this lunch break in the Commons (Exhibit Hall 4, Level 1).

INTERACTIVITY | 12:50-14:30

The Interactivity Limited Time Collection will be open during this lunch break in the Commons (Exhibit Hall 4, Level 1). All presenters will be present.



■ STUDENT DESIGN COMPETITION | BALLROOM D

FINALIST PRESENTATIONS

The 4 finalists will give an oral presentation on their design to the panel of Student Design Competition Judges and CHI conference attendees. Winners will be announced during the closing plenary.

■ TECHNICAL PRESENTATIONS | BALLROOM E

DIMENSIONS OF SENSORY INTERACTION

SESSION CHAIR: Shwetak Patel, *University of Washington, USA*

PAPER | ZeroTouch: An Optical Multi-Touch and Free-Air Interaction Architecture



Jonathan Moeller, Andruid Kerne, *Texas A&M University, USA*

ZeroTouch is a unique optical sensing technique and architecture that allows precision sensing of hands, fingers, and objects within a 2-dimensional plane. We describes the architecture and technology in great detail.

PAPER | Enabling Concurrent Dual Views on Common LCD Screens

Seokhwan Kim, Xiang Cao, Haimo Zhang, *Microsoft Research Asia, China*
Desney Tan, *Microsoft Research, UK*

A pure software solution that enables two independent views to be seen concurrently from different viewing angles on a common LCD screen without any hardware modification or augmentation.

NOTE | Ultra-Tangibles: Creating Movable Tangible Objects on Interactive Tables

Mark Marshall, Thomas Carter, *University of Bristol, UK*
Jason Alexander, *Lancaster University, UK*
Sriram Subramanian, *University of Bristol, UK*

Presents a system that uses ultrasound-based air pressure waves to move multiple tangible objects, independently, around an interactive surface. Allows the creation of new actuated tangible interfaces for interactive surfaces.

NOTE | CapStones and ZebraWidgets: Sensing Stacks of Building Blocks, Dials and Sliders on Capacitive Touch Screens

Liwei Chan, Stefanie Mueller, Anne Roudaut, Patrick Baudisch, *Hasso Plattner Institute, Germany*

Demonstrates how to create stackable tangibles that can be tracked on capacitive touch screens.

PAPER | Brainput: Enhancing Interactive Systems with Streaming fNIRS Brain Input



Erin Solovey, *Massachusetts Institute of Technology, USA*
Paul Schermerhorn, *Indiana University, USA*
Matthias Scheutz, Angelo Sassaroli, Sergio Fantini, Robert Jacob, *Tufts University, USA*

Describes a working system that uses brain activity as a passive, implicit input channel to an interactive system. Shows improved performance and experience with little additional effort from the user.

■ PANEL | BALLROOM F

OCCUPY CHI! ENGAGING U.S. POLICYMAKERS

PANELISTS

Janet Davis, *Grinnell College, USA*
Harry Hochheiser, *University of Pittsburgh*
Juan Pablo Hourcade, *University of Iowa, USA*
Jeff Johnson, *UI Wizards, USA*
Lisa Nathan, *University of British Columbia, Canada*
Janice Tsai, *Microsoft Corporation, USA*

Panelists Lorrie Cranor, Juan Gilbert, Herb Lin, and Whitney Quesenbery share compelling stories and lessons about how HCI has (or has not) influenced U.S. public policy. Get inspired, take action!

■ TECHNICAL PRESENTATIONS | BALLROOM G

PHONE FUN: EXTENDING MOBILE INTERACTION

SESSION CHAIR: Ken Hinckley, *Microsoft Research, USA*

PAPER | iRotate: Automatic Screen Rotation based on Face Orientation

Lung-Pan Cheng, Fang-I Hsiao, Yen-Ting Liu, Mike Y. Chen, *National Taiwan University, Taiwan*

Our paper makes two contributions: 1) a new approach to automatic screen rotation based on users' face orientation instead of device orientation, 2) quantified the feasibility of using front-camera based approach.

PAPER | Looking At You: Fused Gyro and Face Tracking for Viewing Large Imagery on Mobile Devices

Neel Joshi, *Microsoft Research, UK*
Abhishek Kar, *IIT Kanpur, India*
Michael Cohen, *Microsoft Research, UK*

Describes a touch-free interface for viewing large imagery on mobile devices, using a sensor fusion methodology that combines face tracking with gyroscope data.

PAPER | User Learning and Performance with Bezel Menus

Mohit Jain, Ravin Balakrishnan, *University of Toronto, Canada*

Describes the performance of different bezel menu layouts. Using the results, presents a bezel-based text entry technique for eyes-free interaction with the phone. Concludes with design implications for bezel menus.

NOTE | Determining the Orientation of Proximate Mobile Devices using their Back Facing Camera

David Dearman, *Nokia Research Center, Finland*
Richard Guy, Khai Truong, *University of Toronto, Canada*

Novel method to determine the relative orientation or proximate mobile device using only their backside camera. We implemented this method as a service to provide orientation information to mobile applications.

NOTE | Phone as a Pixel: Enabling Ad-Hoc, Large-Scale Displays Using Mobile Devices

Julia Schwarz, David Klionsky, Chris Harrison, *Carnegie Mellon University, USA*
Paul Dietz, *Microsoft Research, USA*
Andrew Wilson, *Microsoft Research, UK*

We present system for creating large displays from a collection of smaller devices, opening opportunities for creating large displays using individuals mobile phones at events such as conferences and concerts.

■ TECHNICAL PRESENTATIONS | 12AB

CULTURE, PLAYFULNESS, AND CREATIVITY

SESSION CHAIR: Lucian Leahu, *Cornell University, USA*

PAPER | Uncomfortable Interactions



Steve Benford, Chris Greenhalgh, *University of Nottingham, UK*
Gabriella Giannachi, *The University of Exeter*
Brendan Walker, Joe Marshall, Tom Rodden, *University of Nottingham, UK*

Discomfort can enhance the entertainment, enlightenment and sociality of cultural experiences. We explore how four kinds of discomfort - visceral, cultural, control and intimacy - can be ethically embedded into experiences.

PAPER | Appreciating plei-plei around Mobiles: Playfulness in Rah Island



Pedro Ferreira, *Mobile Life Centre, Stockholm University, Sweden*
Kristina Höök, *Mobile Life Centre, Stockholm University, Sweden*

Describes field work in Vanuatu around first time mobile phone adoption in an isolated community. Can assist designers and researchers involve playfulness in the design process of limited, inexpensive technologies.

ToCHI | Improving Performance, Perceived Usability, and Aesthetics with Culturally Adaptive User Interfaces

Katharina Reinecke, *Harvard University, USA*
Abraham Bernstein, *University of Zurich*

Beautiful? Usable? Not in my culture! We demonstrate how culturally adaptive interfaces can result in a significant improvement of performance and user experience for multicultural users.

CASE STUDY | Digital Art and Interaction: Lessons in Collaboration

David England, *LJMU, UK*

We present the evolution of Digital Art and HCI collaborations via three case studies. Such collaborations need early, ongoing engagement and HCI techniques need to evolve to support future collaborations.

■ TECHNICAL PRESENTATIONS | 16AB

USABILITY METHODS

SESSION CHAIR: Effie Law, *University of Leicester, UK*

PAPER | What Do Users Really Care About? A Comparison of Usability Problems Found by Users and Experts on Highly Interactive Websites

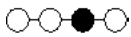
Helen Petrie, Christopher Power, *University of York, UK*

A new set of heuristics to assist in the development and evaluation of highly interactive websites, based on analysis of 935 problems encountered by users on websites.

PAPER | The Effect of Task Assignments and Instruction Types on Remote Asynchronous Usability Testing

Anders Bruun, Jan Stage, *Aalborg University, Denmark*

This paper presents a study of the effect of task assignments and instruction types on the number and variability of identified usability problems in a remote asynchronous usability test



**PAPER | Analysis in Practical Usability Evaluation:
A Survey Study**



Asbjørn Følstad, *SINTEF, Norway*
Effie Law, *University of Leicester, UK*
Kasper Hornbæk, *University of Copenhagen, Denmark*

A survey of 155 usability practitioners is presented, providing insight in current usability evaluation analysis practices and recommendations on how to align future research with practitioner needs for analysis support.

PAPER | Evaluating the Collaborative Critique Method

Tamara Babaian, Wendy Lucas, Mari-Klara Oja, *Bentley University, USA*

We introduce a new usability walkthrough method called Collaborative Critique, inspired by the human-computer collaboration paradigm of system-user interaction, and present the results of its evaluation with usability professionals.

■ TECHNICAL PRESENTATIONS | 17AB

I DID THAT! BEING IN CONTROL

SESSION CHAIR: Mary Beth Rosson, *Penn State, USA*

**PAPER | I did that! Measuring Users' Experience
of Agency in their own Actions**



David Coyle, *University of Bristol, UK*
James Moore, *University of Cambridge, UK*
Per Ola Kristensson, *University of St Andrews, UK*
Paul Fletcher, Alan Blackwell, *University of Cambridge, UK*

We draw on theoretical perspectives in cognitive neuroscience and describes two implicit methods through which personal agency can be empirically investigated. We report two experiments applying these methods to HCI problems.

**PAPER | The Design Space of Opinion Measurement
Interfaces: Exploring Recall Support for Rating and
Ranking**

Syavash Nobarany, Louise Oram, Vasanth Kumar Rajendran,
Chi-Hsiang Chen, Joanna McGrenere, Tamara Munzner,
University of British Columbia, Canada

Characterizes and explores through user studies the design space of opinion measurement interfaces. Presents key directions for future research, and informs the design of future rating and ranking interfaces.

**ToCHI | Conceptualizing and Advancing Research
Networking Systems**

Titus Schleyer, Brian Butler, Mei Song, Heiko Spallek, *University of Pittsburgh*

Comprehensive research agenda for Research Networking Systems, a new type of application designed to help scientists find collaborators. Presents research challenges for system foundations, presentation, architecture and evaluation.

**NOTE | Assessing the Vulnerability of Magnetic
Gestural Authentication to Video-Based Shoulder
Surfing Attacks**

Alireza Sahami Shirazi, *University of Stuttgart, Germany*
Peyman Moghadam, *CSIRO ICT Centre, Australia*
Hamed Ketabdar, *Technische Universität Berlin, Germany*
Albrecht Schmidt, *University of Stuttgart, Germany*

The vulnerability of magnetic gestural authentication to video-based shoulder surfing attacks is assessed through a realistic scenario by videotaping the authentication interaction from four different angles and providing them to adversaries

**CASE STUDY | A Room with a View: Understanding
Users' Stages in Picking a Hotel Online**

Jens Riegelsberger, *Google UK*
Michelle Lee, Scott Lederer, *Google Inc., USA*

Case study describing how a framework derived from lab usability study and literature guided development of Google Hotel Finder. Shows how even small research efforts can help guide product development.

■ TECHNICAL PRESENTATIONS | 18AB

TEACHING WITH GAMES

SESSION CHAIR: Andreas Butz, *University of Munich, Germany*

**PAPER | Reducing Compensatory Motions in
Video Games for Stroke Rehabilitation**



Gazihan Alankus, *Washington University in St. Louis, USA*
Caitlin Kelleher, *Washington University, USA*

Series of studies about creating video games that use operant conditioning to correct therapeutic exercises for stroke rehabilitation. Can assist video game designers in modifying unconscious behavior through games.

PAPER | Of BATs and APes: An Interactive Tabletop Game for Natural History Museums

Michael Horn, Zeina Atrash Leong, *Northwestern University, USA*
 Florian Block, *Harvard University, USA*
 Judy Diamond, *University of Nebraska State Museum, USA*
 Margaret Evans, *University of Michigan, USA*
 Brenda Phillips, Chia Shen, *Harvard University, USA*

Describes user experiences with a tabletop game on evolution at a natural history museum. Can help designers approach evaluation of interactive surfaces in museums. Presents qualitative results on visitor engagement.

PAPER | Playable Character: Extending Digital Games into the Real World

Jason Linder, Wendy Ju, *California College of the Arts, USA*

This paper describes a series of research probe games developed to investigate how real-world activity could be incorporated into digital game systems.

NOTE | Game Design for Promoting Counterfactual Thinking

Elizabeth Bonsignore, *University of Maryland, USA*
 Kari Kraus, *University of Maryland, College Park, USA*
 Amanda Visconti, *University of Maryland, USA*
 Derek Hansen, *Brigham Young University*
 Ann Fraistat, *University of Maryland, College Park, USA*
 Allison Druin, *University of Maryland, USA*

Presents a formative typology of counterfactual design patterns that can help designers, educators, and players locate interesting fault lines in reality that facilitate the expansion of ARG mythologies.

NOTE | Discovery-based Games for Learning Software

Tao Dong, *University of Michigan, USA*
 Mira Dontcheva, Diana Joseph, *Adobe Systems, USA*
 Karrie Karahalios, *University of Illinois, USA*
 Mark Newman, Mark Ackerman, *University of Michigan, USA*

Describes a discovery-based learning game that teaches people how to use complex software such as Adobe Photoshop using the Jigsaw metaphor. Can scaffold and motivate learning new tools and techniques.

■ TECHNICAL PRESENTATIONS | 18CD

HEALTH + DESIGN

SESSION CHAIR: Jodi Forlizzi, *Carnegie Mellon University, USA*

PAPER | Activity-Based Interaction: Designing with Child Life Specialists in a Children's Hospital



Matthew Bonner, Lan Wang, Elizabeth Mynatt, *Georgia Tech, USA*

Describes a framework for analyzing mediating activities, especially between children and adults. Can assist understanding of relationship between technical system characteristics, actors and observed collaborative versus co-present interactions.

ToCHI | Using Context to Reveal Factors that Affect Physical Activity

Ian Li, Anind Dey, Jodi Forlizzi, *Carnegie Mellon University, USA*

Describes three explorations of using contextual information to support reflection on factors that affect physical activity. Informs the design of physical activity awareness systems and, generally, personal informatics systems.

PAPER | Adaptation as Design: Learning from an EMR Deployment Study

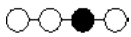
Sun Young Park, Yunan Chen, *University of California, Irvine, USA*

An observational study in an Emergency Department to examine clinicians' adaptation process after deploying an Electronic Medical Records (EMR) system.

CASE STUDY | User Centered Design in the OR

Tony Fernandes, *StudioUE, USA*

This case study illustrates how HCI techniques can be applied to the design of a User Experience for a computer-based surgical device. Video and photography from research will be shown.



■ TECHNICAL PRESENTATIONS | 19AB

CHECK THIS OUT: RECOMMENDER SYSTEMS

SESSION CHAIR: James Fogarty, *University of Washington, USA*

NOTE | AccessRank: Predicting What Users Will Do Next



Stephen Fitchett, Andy Cockburn, *University of Canterbury, New Zealand*

Describes AccessRank, an algorithm that predicts user actions. Log analyses (web visits, window switches, and command use) demonstrate that it outperforms existing techniques (e.g. recency, frequency). Gives directions for deployment.

NOTE | Effects of Behavior Monitoring and Perceived System Benefit in Online Recommender Systems

Michael Nowak, Clifford Nass, *Stanford University, USA*

Experiment manipulating an online recommender system's behavior-monitoring functionality and its perceived consumer or corporate benefit. Offers guidance for theorists and designers of recommender systems.

ToCHI | Design and Evaluation of a Command Recommendation System for Software Applications

Wei Li, Justin Matejka, Tovi Grossman, *Autodesk Research, Canada*
Joseph Konstan, *University of Minnesota, USA*
George Fitzmaurice, *Autodesk Research, Canada*

Explores the design space of modern recommender systems in complex software applications for aiding command awareness. Performs a 6-week real-time within-application field study in user's actual working environments.

PAPER | Asking the Right Person: Supporting Expertise Selection in the Enterprise

Svetlana Yarosh, *Georgia Tech, USA*
Tara Matthews, Michelle Zhou, *IBM Almaden, USA*

Lab study demonstrating that providing additional information about experts in expertise recommenders leads to better selections, and indicating which information is most useful. Offers design implications for expertise recommender creators

PAPER | To Switch or Not To Switch: Understanding Social Influence in Online Choices

Haiyi Zhu, *Carnegie Mellon University, USA*
Bernardo Huberman, Yarun Luon, *HP Labs, USA*

Do online recommendations sway people's own opinions? The results of this paper show that this is indeed the case, with important consequences for consumer behavior research and marketing strategies.

■ SPECIAL INTEREST GROUP | 11A

SIG: END-USER PROGRAMMING

ORGANIZERS

Christopher Scaffidi, *Oregon State University, USA*
Joel Brandt, *Adobe Systems, USA*
Margaret Burnett, *Oregon State University, USA*
Andrew Dove, *National Instruments, USA*
Brad Myers, *Carnegie Mellon University, USA*

This special interest group meeting will bring together the community of researchers and companies focused on creating end-user programming tools, thereby facilitating technology transfer and future collaboration.

■ SPECIAL INTEREST GROUP | 11B

REJECT ME: PEER REVIEW AND SIGCHI

ORGANIZERS

Michael Bernstein, *Massachusetts Institute of Technology, USA*
Dan Cosley, *Cornell University, USA*
Carl DiSalvo, *Georgia Tech, USA*
Sanjay Kairam, *Stanford University, USA*
David Karger, *Massachusetts Institute of Technology, USA*
Travis Kriplean, *University of Washington*
Cliff Lampe, *University of Michigan, USA*
Wendy Mackay, *INRIA, France*
Loren Terveen, *University of Minnesota, USA*
Jacob Wobbrock, *University of Washington, USA*
Sarita Yardi, *Georgia Tech, USA*

Discussion about review process at CHI focusing on 1) ways to improve reviewing, 2) alternative peer review models, and 3) educational materials for new reviewers.

AFTERNOON BREAK | COMMONS

15:50-16:30

Refreshments are served in the Commons (Exhibit Hall 4).

INTERACTIVITY | 15:50-16:30

The Interactivity Permanent Collection will be open during this break in the Commons (Exhibit Hall 4, Level 1). All presenters will be present.

■ PANEL (INVITED) | BALLROOM D

MANAGING UX TEAMS: INSIGHTS FROM EXECUTIVE LEADERS

PANELISTS

Janice Rohn, *Experian, USA*
 Dennis Wixon, *Microsoft Research, USA*
 Dan Rosenberg, *SAP Labs, USA*
 Jeremy Ashley, *Oracle, USA*
 Larry Tesler, *Consultant, USA*

Lively interviews of well-known executive leaders in User Experience, discussing their experiences with building and managing teams, their advice on best practices, and their vision for the future.

■ TECHNICAL PRESENTATIONS | BALLROOM E

MORPHING & TRACKING & STACKING: 3D INTERACTION

SESSION CHAIR: Celine Latulipe, *University of North Carolina at Charlotte, USA*

PAPER | KidCAD: Digitally Remixing Toys Through Tangible Tools

Sean Follmer, Hiroshi Ishii, *Massachusetts Institute of Technology, USA*

We bring physical interaction to digital modeling, allowing children to use existing physical objects as tangible building blocks for new designs. We introduce KidCAD a digital clay interface for remixing toys.

PAPER | ClayVision: The (Elastic) Image of the City 

Yuichiro Takeuchi, *Sony Computer Science Laboratories, Inc., Japan*
 Ken Perlin, *New York University, USA*

Describes an augmented reality city guide that communicates through real-time 3D transformations of buildings. Can spearhead critical reassessments and revisions of design metaphors for augmented reality applications.

PAPER | HoloDesk: Direct 3D Interactions with a Situated See-Through Display

Otmar Hilliges, *Microsoft Research, UK*
 David Kim, *Newcastle University, UK*
 Shahram Izadi, *Microsoft Research, UK*
 Malte Weiss, *RWTH Aachen University, Germany*
 Andrew Wilson, *Microsoft Research, UK*

HoloDesk is an interactive system combining an optical see-through display and Kinect; enabling direct manipulation of 3D content. A new technique to model input from raw Kinect data is introduced.

PAPER | DisplayStacks: Interaction Techniques for Stacks of Flexible Thin-Film Displays

Audrey Girouard, *Carleton University, Canada*
 Aneesh Tarun, Roel Vertegaal, *Queen's University, Canada*

Presents DisplayStacks, a paper computer that allows physical stacking of digital documents via piles of thin-film flexible E Ink displays, with associated interaction techniques.

■ TECHNICAL PRESENTATIONS | BALLROOM F


SOCIAL COMPUTING: BUSINESS & BEYOND

SESSION CHAIR: Henriette Cramer, *Mobile Life @ SICS, Sweden*

PAPER | Corporate Career Presences on Social Network Sites: An Analysis of Hedonic and Utilitarian Value

Franziska Brecht, *Humboldt-Universität zu Berlin, Germany*
 Andreas Eckhardt, *Goethe-Universität Frankfurt am Main, Germany*
 Christian Berger, Oliver Guenther, *Humboldt-Universität zu Berlin, Germany*

Presents a structural equation model which describes what benefits job seekers derive from corporate career presences on social network sites.

PAPER | Finding and Assessing Social Media Information Sources in the Context of Journalism 

Nicholas Diakopoulos, Munmun De Choudhury, Mor Naaman, *Rutgers University, USA*

Design and evaluation of a system for journalists to filter and assess the verity of sources found through social media, including eyewitness, user-archetype classifiers, and network and location cues.

CASE STUDY | Evaluation of the Uses and Benefits of a Social Business Platform

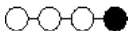
Lester Holtzblatt, Jill Drury, Daniel Weiss, Laurie Damianos, Donna Cuomo, *The MITRE Corporation, USA*

This case study evaluates how knowledge workers within a corporation use and benefit from using a social business platform and how different patterns of staff activities impact their experienced benefits.

CASE STUDY | Sustainability of a College Social Network Site: Role of Autonomy, Engagement, and Relatedness

Donghee Wohn, *Michigan State University, USA*

Case study describing successful factors of 10-year old college social network site. Suggestions to designers and administrators who want to create a sustainable online community.



NOTE | Understanding Experts' and Novices' Expertise Judgment of Twitter Users

Q. Vera Liao, *University of Illinois at Urbana-Champaign, USA*
Claudia Wagner, *DIGITAL- Institute for Information and Communication Technologies, Austria*
Peter Pirolli, *Palo Alto Research Center (PARC), USA*
Wai-Tat Fu, *University of Illinois at Urbana-Champaign, USA*

Presents an empirical study to understand the differences between experts and novices in judging expertise of Twitter authors. Provides design guidelines for micro-blogger recommendation system.

■ TECHNICAL PRESENTATIONS | BALLROOM G

PROGRAMMING, PERFORMANCE, AND SENSE MAKING

SESSION CHAIR: John Thomas, *IBM Research, USA*

NOTE | Modeling Task Performance for a Crowd of Users from Interaction Histories



Steven Gomez, David Laidlaw, *Brown University, USA*

Describes a system for human performance modeling that utilizes interaction histories from a crowd of end users. Can assist UI designers in quantitatively evaluating interfaces.

CASE STUDY | Applying Design Strategies in Publication Networks – A Case Study

Bram Vandeputte, Erik Duval, Joris Klerkx, *KU Leuven, Belgium*

A comparative case study that investigates the influence of design strategies on the user behavior. Can provide a guidance in choosing a design strategy in sensemaking tools.

PAPER | Designing a Debugging Interaction Language for Cognitive Modelers: An Initial Case Study in Natural Programming Plus

Christopher Bogart, Margaret Burnett, *Oregon State University, USA*

Scott Douglass, *Air Force Research Laboratory, USA*
Hannah Adams, Rachel White, *Oregon State University, USA*

Investigates how a debugging environment should support cognitive modelers. Suggests design implications as well as validation opportunities for interactive programming tools and languages.

PAPER | CogTool-Explorer: A Model of Goal-Directed User Exploration that Considers Information Layout

Leong-Hwee Teo, *DSO National Laboratories, Singapore*
Bonnie John, *IBM Research, USA*
Marilyn Blackmon, *University of Colorado, USA*

Describes a tool for predicting novice exploration behavior, including errors, that accounts for 63-82% of the variance in three usability metrics. Includes examples using the predictions to direct design effort.

PAPER | Easing the Generation of Predictive Human Performance Models from Legacy Systems

Amanda Swearngin, Myra Cohen, *University of Nebraska-Lincoln, USA*
Bonnie John, Rachel Bellamy, *IBM Research, USA*

Describes a tool that leverages GUI testing technology from Software Engineering in the creation of human performance models for evaluating existing systems. Many steps are automated, easing the modeler's job.

■ TECHNICAL PRESENTATIONS | 12AB

SEE HEAR SPEAK: REDESIGNING I/O FOR EFFECTIVENESS

SESSION CHAIR: Eytan Adar, *University of Michigan, USA*

PAPER | The SoundsRight CAPTCHA: An Improved Approach to Audio Human Interaction Proofs for Blind Users

Jonathan Lazar, Jinjuan Feng, Tim Brooks, Genna Melamed, *Towson University, USA*
Brian Wentz, *Frostburg State University, USA*
Jon Holman, Abiodun Olalere, Nnanna Ekedebe, *Towson University, USA*

Blind users cannot use visual CAPTCHAs, and audio CAPTCHAs have below 50% task success. Blind users had over 90% task success rate on our new real-time audio CAPTCHA.

PAPER | Voice Typing: A New Speech Interaction Model for Dictation on Touchscreen Devices

Anuj Kumar, *Carnegie Mellon University, USA*
Tim Paek, Bongshin Lee, *Microsoft Research, UK*

Describes Voice Typing, a new speech interaction technique, where utterances are transcribed as produced to enable real-time error identification. Reduces user corrections and cognitive demand for text input via speech.

PAPER | Legible, Are You Sure? An Experimentation-based Typographical Design in Safety-Critical Context

Jean-Luc Vinot, *Université de Toulouse - ENAC/IRIT, France*
 Sylvie Athenes, *Université de Toulouse - UPS, France*

Presents a study involving the design of typeface suited for the cockpit. More widely than for Safety-critical contexts, Experimentation-based design process helps designers validate usability of text display.

PAPER | SSMRecolor: Improving Recoloring Tools with Situation-Specific Models of Color Differentiation

David Flatla, Carl Gutwin, *University of Saskatchewan, Canada*

Describes a recoloring tool that improves color differentiability by modeling user color perception abilities. Compared to existing recoloring tools, we improve accuracy by 20% and reduce selection time by two seconds.

■ **ALT.CHI | 16AB**

ALT.CHI: MAKING SENSE

SESSION CHAIR: Amanda Williams, *Concordia University, Canada*

alt.chi | Representing Our Information Structures for Research and for Everyday Use

William Jones, *University of Washington, USA*
 Kenneth Anderson, *University of Colorado Boulder, USA*
 Steve Whittaker, *Human-Computer Interaction, University of California, USA*

To realize a scientific inquiry of personal information management (PIM), researchers need methods for representing and measuring information structure. These methods, with small extension, have direct application to end users.

alt.chi | User-Driven Collaborative Intelligence – Social Networks as Crowdsourcing Ecosystems

Zann Gill, *ECOdesyn lab, USA*

Proposes Collaborative Intelligence as a subdiscipline of CHI to evolve platforms for problem-solving by harnessing next generation hybrids of crowd-sourcing and social networks to develop Vernor Vinge's landmark "singularity" concepts

alt.chi | Thin Slices of Interaction: Predicting Users' Task Difficulty within 60 sec.

João Pedro Ferreira, Marta Noronha e Sousa, *University of Minho, Portugal*

Nuno Branco, *School of Technology and Management of Felgueiras, Portugal*

Manuel João Ferreira, *University of Minho, Portugal*

Nuno Otero, *Linnæus University, Sweden*

Nelson Zagalo, Pedro Branco, *University of Minho, Portugal*

This study shows that the users' experienced task difficulty while interacting with a photocopier can be predicted from the automatic video coding of Activity and Emphasis of movement.

alt.chi | Citeology: Visualizing Paper Genealogy

Justin Matejka, Tovi Grossman, George Fitzmaurice, *Autodesk Research, Canada*

Presents Citeology, a interactive system to explore the relationships between papers through their use of citations. The full CHI and UIST paper database is used as an example corpus.

alt.chi | Mining Whining in Support Forums with Frictionary

Andrew Ko, *University of Washington, USA*

Describes a technique for extracting standardized problem statements from support forums on the web. Mozilla designers and support staff believe it could be useful for prioritizing design decisions.

■ **TECHNICAL PRESENTATIONS | 17AB**

TRIPLE T: TOUCH, TABLES, TABLETS

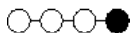
SESSION CHAIR: Björn Hartmann, *University of California Berkeley, USA*

PAPER | Hand Occlusion on a Multi-Touch Tabletop

Daniel Vogel, *University of Waterloo, Canada*

Géry Casiez, *LIFL & INRIA Lille, University of Lille, France*

Presents experimental results, templates, and geometric models for the shape of hand occlusion on a multi-touch table. Can assist designers when justifying interface layouts and forms groundwork for real-time models.



PAPER | BiTouch and BiPad: Designing Bimanual Interaction for Hand-held Tablets

Julie Wagner, *INRIA, France*
Stephane Huot, *Univ Paris-Sud, France*
Wendy Mackay, *INRIA, France*

BiPad enables bimanual interaction with the support hand on multitouch tablets. With the BiTouch design space, we discuss the device-support function as an extension to Guiard's kinematic chain theory.

PAPER | See Me, See You: A Lightweight Method for Discriminating User Touches on Tabletop Displays

Hong Zhang, *University of Manitoba, Canada*
Xing-Dong Yang, *University of Alberta, Canada*
Barrett Ens, Hai-Ning Liang, *University of Manitoba, Canada*
Pierre Boulanger, *University of Alberta, Canada*
Pourang Irani, *University of Manitoba, Canada*

See Me, See You is a lightweight method that uses finger orientation for distinguishing touches from multiple users on digital tabletops. Our detection method is accurate under complex conditions.

ToCHI | Two-Handed Marking Menus for Multitouch Devices

Kenrick Kin, Björn Hartmann, Maneesh Agrawala, *University of California, Berkeley, USA*

Describes two-handed marking menu techniques. One variant reduces menu selection times over the one-handed technique and another variant doubles the number of menu items.

■ TECHNICAL PRESENTATIONS | 18AB

DEFYING ENVIRONMENTAL BEHAVIOR CHANGES

SESSION CHAIR: Alan Borning, *University of Washington, USA*

PAPER | "We've Bin Watching You" - Designing for Reflection and Social Persuasion to Promote Sustainable Lifestyles

Anja Thieme, Rob Comber, *Newcastle University, UK*
Julia Miebach, *University of Duisburg-Essen, Germany*
Jack Weeden, *Newcastle University, UK*
Nicole Kraemer, *University of Duisburg-Essen, Germany*
Shaun Lawson, *University of Lincoln, UK*
Patrick Olivier, *Newcastle University, UK*

Presents the design and study of BinCam, a social persuasive system to motivate waste-related behavioral change. Suggestions for employing social media and enabling social influence to promote change are provided.

PAPER | Using Mobile Phones to Support Sustainability: A Field Study of Residential Electricity Consumption

Jesper Kjeldskov, Mikael B. Skov, Jeni Paay,
Rahuvaran Pathmanathan, *Aalborg University, Denmark*

We explore the use of a mobile system promoting electricity conservation in the home. Findings provide insight into peoples awareness of consumption and how this may be influenced through design.

PAPER | 'Watts in It for Me?': Design Implications for Implementing Effective Energy Interventions in Organisations

Derek Foster, Shaun Lawson, Jamie Wardman, *University of Lincoln, UK*
Mark Blythe, *Northumbria University, UK*
Conor Linehan, *University of Lincoln, UK*

Describes a Grounded Theory analysis of a series of organisational energy workshops focused on employee perceptions and use of energy in the workplace. Presents design insights for technology-enabled energy interventions.

PAPER | The Design and Evaluation of Prototype Eco-Feedback Displays for Fixture-Level Water Usage Data



Jon Froehlich, *University of Maryland, College Park, USA*
Leah Findlater, *University of Maryland, USA*
Marilyn Ostergren, Solai Ramanathan, Josh Peterson,
Inness Wragg, Eric Larson, Fabia Fu, Mazhengmin Bai,
Shwetak Patel, James Landay, *University of Washington, USA*

Inspired by emerging water sensing systems that provide disaggregated usage data, we explore a range of water-based feedback visualizations and examine issues of accountability, competition, and integration into domestic space.

■ TECHNICAL PRESENTATIONS | 18CD

LEARNING WITH CHILDREN

SESSION CHAIR: Carl DiSalvo, *Georgia Tech, USA*

PAPER | Interpreting Input from Children: a Designerly Approach

Christopher Frauenberger, Judith Good, *University of Sussex, UK*
Wendy Keay-Bright, *University of Wales Institute, UK*
Helen Pain, *University of Edinburgh, UK*

Describes a process to interpret input from participatory design work with children with and without Autism to develop a learning environment. Argues for designerly approaches and presents key practical lessons.

CASE STUDY | Acquisition of Social Abilities through Musical Tangible User Interface: Children with Autism Spectrum Condition and the Reactable.

Lilia Villafuerte, Milena Markova, Sergi Jorda, *MTG - UPF, Spain*

The Reactable, a musical tangible user interface, is used with nine children with autism spectrum condition. Results show an improvement in social competences during the sessions, even for non-verbal subjects.

PAPER | Video Kids: Augmenting Close Friendships with Asynchronous Video Conversations in VideoPal

Kori Inkpen, *Microsoft Research, UK*
 Honglu Du, *Pennsylvania State University, USA*
 Asta Roseway, Aaron Hoff, Paul Johns, *Microsoft Research, UK*

This work demonstrates the power of asynchronous video to support children's rich social interactions and augment existing face-to-face friendships. The results highlight important insights for children's use of video communication.

NOTE | Interchangeability of Computer and Paper Based Questionnaires in Gathering Computer Experience Data from Young Children

Akiyo Kano, Janet Read, *University of Central Lancashire, UK*

This study asked whether paper and computer based questionnaires were interchangeable for young children answering questions about their computer experience.

CASE STUDY | Designing for Child Resilience

Catherine Flick, Penny Duquenoy, *Middlesex University, UK*
 Matt Jones, *Swansea University, UK*

Case study describing the development of a children's privacy centered online child protection device. Can assist in developing engaging value-centered technologies.

■ TECHNICAL PRESENTATIONS | 19AB

DESIGN THEORY & PRACTICE

SESSION CHAIR: Jeffrey Bardzell, *Indiana University, USA*

PAPER | Understanding Agency in Interaction Design Materials

Jakob Tholander, Maria Normark, *Mobile Life Centre, Stockholm University, Sweden*
 Chiara Rossitto, *Stockholm University, Sweden*

The notion of agency is used to analyse materiality in interaction design. We illustrate the various levels at which agency emerge in the context of intensive short-time prototyping sessions.

PAPER | Talking about Implications for Design in Pattern Language

Sebastian Deneff, *Fraunhofer FIT*
 David Keyson, *TU Delft, Netherlands*

This paper presents our approach to capture and share knowledge from contextual analysis using pattern language. Our study shows that pattern language supports a reflective discussion of novel technology.

CASE STUDY | VOLLEY: Design Framework for Collaborative Animation

Cindy Wong, *New York University, USA*
 Richard Zaragoza, *Microsoft Research FUSE Labs, USA*

Case study describing design prototype for an online collaborative animation application. Can assist designers in understanding how to engage social communities and simplify animation interfaces, especially in formative design stages.

CASE STUDY | The Relationship between Industrial Design and Interaction Design in Product Development Activities

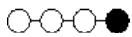
Canan Akoglu, *Umea University, Sweden*

Describes the relationship between industrial designers and interaction designers in product development activities. It can assist both design professions to collaborate with each other in fuzzy front end pervasively.

NOTE | Your Opinion Counts! Leveraging Social Comments for Analyzing Aesthetic Perception of Photographs

Jose San pedro, *Telefonica Research, Spain*
 Poonam Suryanarayan, *The Pennsylvania State University, USA*

Presents a method to extract domain knowledge from user comments in online communities. A case study is demonstrated using this method to reveal the main factors influencing photography aesthetics.



■ SPECIAL INTEREST GROUP | 11A

HCI RESEARCH AND EDUCATION IN ARABIC UNIVERSITIES

ORGANIZERS

Habib M. Fardoun, *King Abdulaziz University, Saudi Arabia*

Jose A. Gallud, *University of Castilla-La Mancha, Spain*

Daniyal Alghazzawi, *King Abdulaziz University, Saudi Arabia*

“HCI Research and Education in Arabic Universities” SIG objective is to identify the century challenges for Arabic universities to improve the HCI research and promote the international presence in cooperation projects.

■ SPECIAL INTEREST GROUP INVITED | 11B

ENGINEERING COMMUNITY: THE ROLE OF ENGINEERING WORK IN CHI

ORGANIZERS

Ruven Brooks, *Ruven Brooks Consulting, USA*

Nicholas Graham, *Queen’s University, Canada*

Jeffrey Nichols, *IBM Research, USA*

Philippe Palanque, *Université Paul Sabatier Toulouse, France*

Fabio Paternò, *CNR-ISTI, Italy*

This SIG is a forum to discuss the state of the engineering community and how to strengthen its role in CHI.

SPECIAL EVENT JOINT HOSPITALITY RECEPTION

Bob Bullock Texas State History Museum
1800 North Congress Avenue, Austin

18:30–20:30

This year, a joint hospitality reception will be held at the beautiful Bob Bullock Texas State History Museum. Your badge is your ticket to enter the museum (and transportation), so please be sure to wear it. Delicious Texas-style hors d’oeuvres will be served, and a full bar is available. (You pick up your drink tickets at the door). In addition to meeting our hosts and networking with old and new colleagues in this lovely venue, you can visit all of the fascinating exhibits which will be specially open for our conference attendees. The well-stocked gift shop will also offer a special 10% discount on all purchases this evening.

Busing Available

Buses will be running throughout the event to take you to and from the museum. Pick up and drop off will take place in front of the convention center.

CHI Champion Hosts:

Bloomberg Google, Inc.
eBay/PayPal Microsoft Corp.

Friend of CHI Host:

Samsung UX Center America













Other Hosts:

IBM
Virginia Tech, University of California Irvine,
University of Maryland, Iowa State University,
and Cornell University



10 May 2012 | Thursday

— = 10 minutes (Note, short Case Study) — = 15 minutes (alt.chi) — = 20 minutes (Paper, ToCHI, long Case Study)

	8:30-9:20	9:30-10:50	11:30-12:50	14:30-15:50	16:30-17:50
Ballroom D	CHI Madness	Award Talk Dan Olsen SIGCHI Lifetime Research Award	Invited Talk Stu Card Interaction Science in the Age of Makers and Instructables		Closing Plenary Hugh Herr Designing Intelligent Orthotics and Prosthetics
Ballroom E		Technical Presentations Touch Text Entry    	Technical Presentations Bigger is Better: Large and Multiple Display Environments	Technical Presentations Use the Force	
Ballroom F		Panel Material Interactions - From Atoms & Bits to Entangled Practices	Panel Social Sustainability: An HCI Agenda	Panel How-to-guide: Collaborating With Executives In A Pro-design World.	
Ballroom G		Technical Presentations Programming and Debugging	Technical Presentations What a Lovely Gesture 	Technical Presentations Human Performance Gives Us Fitts'	
12AB		alt.chi Home and Neighborhood	Technical Presentations Tweet, Tweet, Tweet! 	Technical Presentations Usability and User Research 	
16AB		Technical Presentations Comfortable Aging 	Technical Presentations Better Together	Technical Presentations Groups @ Work	
17AB		Technical Presentations Interactions Beyond the Desktop  	Technical Presentations Me & My Mobile 	Technical Presentations Do You See What Eye See 	
18AB		Technical Presentations Right Where I Am: UX in Complex Environments	Technical Presentations Understanding Gamers	Technical Presentations Home and Family	
18CD		Technical Presentations Health and Children	alt.chi Design Matters	Technical Presentations Designing for Learners' Complex Needs	
19AB		Technical Presentations Organizing the Recovery	Technical Presentations Crowdsourcing and Peer Production II	Technical Presentations With a Little Help from My Friends	
11A		SIG Changing requirements to HCI funding: A global perspective	Invited SIG Participation and HCI: Why Involve People in Design?	SIG Designing Wellness Interventions and Applications	
11B		Invited SIG Digital Art: Evaluation, Appreciation, Critique	SIG Gaze Interaction in the Post-WIMP...	SIG Work Life Balance in HCI	
13A		Course 33 Cognitive Crash Dummies: Predict ... (See Page 19 for details)	Course 33 (continued)	SIG Animal-Computer Interaction	
13B		Course 34 Designing for Persuasion... (See Page 19 for details)	Course 36 Methodology for Evaluating ... Mobile (See Page 19 for details)	Course 36 (continued)	
14		Course 35 From Discourse-based Models to... (See Page 19 for details)	Course 35 (continued)	Course 38 ... UCD Methods that Maximize ... (See Page 19 for details)	
15		Course 32 Agile User Experience and UCD... (See Page 19 for details)	Course 32 (continued)	Course 37 Putting Conceptual Models to Work (See Page 19 for details)	

Technical Presentations include Paper, Note, Case Study and ToCHI presentations

Exhibits	Interactivity	Posters	Special Events
Commons (Exhibit Hall 4) 10:50-13:30	Permanent Collection Commons (Exhibit Hall 4) 10:50-11:30 Closed at 11:30	Child-Computer, Sustainability, Engineering, Games & Entertainment Health, Other Topics (WIP300-WIP834) Commons (Exhibit Hall 4)	Interact with Poster Authors Commons (Exhibit Hall 4) 10:50-11:30 Celebrate CHI's 30th Anniversary 4th Floor Foyer 15:50-16:30 (during break)

CHI MADNESS | BALLROOM D**8:30-9:20****SESSION CHAIRS:**Paul André, *Carnegie Mellon University*
Petra Sundström, *Salzburg University*

CHI Madness returns to give everyone a lightning speed overview of the day's program.

AWARD TALK | BALLROOM D**LIFETIME ACHIEVEMENT IN RESEARCH AWARD****Creating the Digital Future:
The Role of Interactive Systems**Dan Olsen, Jr., *Brigham Young University*

The creation of a new interactive platform is the creation of a medium for expression. It empowers others to create and deliver value in ways that once were too difficult, too inconvenient or too expensive. The introduction of a new interactive platform changes what is feasible and possible. As we consider research into future interactive systems, what are the lessons we can learn from past success. How will we invent the next medium for interactive expression?

About Dan Olsen Jr.: Dan Olsen Jr. is a Professor of Computer Science at Brigham Young University and was the first director of the CMU Human-Computer Interaction Institute at CMU. He is one of the earliest and most influential researchers in the user interface software domain. His first contributions were in using formal language techniques (such as finite state machines and Backus-Naur Form) to specify the syntactic structure of a user interface. He has published three books on user interface software: "Building Interactive Systems: Principles for Human-Computer Interaction," "Developing User Interfaces," and "User Interface Management Systems: Models and Algorithms." His 1988 MIKE system was an early and influential system for automatically generating a user interface from semantic specifications. Dan has continued to make important research contributions and novel systems in a wide variety of areas, from CSCW to Interactive Machine Learning, and developing Metrics and Principles for Human-Robot Interaction. Dan has also received CHI's Lifetime Service Award for his many years of service on behalf of the SIGCHI community. He was the founding editor of TOCHI, and played a key role in establishing the UIST conference and in making it one of the most successful SIGCHI conferences.

TECHNICAL PRESENTATIONS | BALLROOM E**TOUCH TEXT ENTRY****SESSION CHAIR:** Daniel Wigdor, *University of Toronto, Canada***PAPER | Observational and Experimental Investigation of Typing Behaviour using Virtual Keyboards for Mobile Devices**Niels Henze, *University of Oldenburg, Germany*
Enrico Rukzio, *University of Duisburg-Essen, Germany*
Susanne Boll, *University of Oldenburg, Germany*

Observed the typing behaviour of a large number of smartphone users using a mobile game and conducted a large-scale experiment that shows how to improve users' typing performance without costs.

PAPER | Multidimensional Pareto Optimization of Touchscreen Keyboards for Speed, Familiarity and Improved Spell CheckingMark Dunlop, John Levine, *University of Strathclyde, UK*

Describes a new approach to keyboard layout optimization for faster text entry with better spell correction on touchscreen phones, while retaining familiarity with Qwerty. Includes designs and user test results.

NOTE | Beyond QWERTY: Augmenting Touch Screen Keyboards with Multi-Touch Gestures for Non-Alphanumeric InputLeah Findlater, Ben Lee, Jacob Wobbrock, *University of Washington, USA*

We introduce a bimanual, multi-touch gestural approach for non-alphanumeric text input on touch-screen keyboards. This technique is designed to augment, not replace, existing solutions.

NOTE | Touch Typing using Thumbs: Understanding the Effect of Mobility and Hand PostureHugo Nicolau, Joaquim Jorge, *INESC-ID, Portugal*

Presents a user study of touch typing whilst walking and the effect of different hand postures and target size. Can assist designers in developing new effective mobile keyboards.

PAPER | WalkType: Using Accelerometer Data to Accomodate Situational Impairments in Mobile Touch Screen Text EntryMayank Goel, *University of Washington, USA*
Leah Findlater, *University of Maryland, USA*
Jacob Wobbrock, *University of Washington, USA*

Describes an adaptive text entry system that leverages the mobile device's accelerometer to compensate for extraneous movement while walking. This technique can significantly improve typing speed and accuracy.

■ PANEL | BALLROOM F
MATERIAL INTERACTIONS - FROM ATOMS & BITS TO ENTANGLED PRACTICES
PANELISTS

Mikael Wiberg, *Uppsala University, Sweden*
 Hiroshi Ishii, *MIT Media Laboratory, USA*
 Paul Dourish, *University of California, Irvine, USA*
 Daniela Rosner, *University of California, Berkeley, USA*
 Anna Vallgård, *IT University of Copenhagen, Denmark*
 Petra Sundström, *University of Salzburg, Austria*
 Tobie Kerridge, *University of London, UK*
 Mark Rolston, *frog design Inc., New York, USA*

This panel addresses some of the core aspects of the theme “It’s the experience” for CHI 2012 by focusing on the materials that constitute the foundation for interaction with computers.

■ TECHNICAL PRESENTATIONS | BALLROOM G
PROGRAMMING AND DEBUGGING

SESSION CHAIR: Niklas Elmqvist, *Purdue University, USA*

PAPER | Codelets: Linking Interactive Documentation and Example Code in the Editor

Stephen Oney, *Carnegie Mellon University, USA*
 Joel Brandt, *Adobe Systems, USA*

Presents Codelets, which link interactive documentation with example code in code editors. Codelets allow third parties to write rich in-editor documentation.

PAPER | Evaluating Interactive Support for Secure Programming

Jing Xie, Heather Lipford, Bei-Tseng Chu, *University of North Carolina at Charlotte, USA*

We developed an interactive tool that aids programmers in developing secure code and evaluated it through two comparison-based user studies. Results demonstrate that interactive techniques can help reduce non-functional security errors.

PAPER | Triggering Triggers and Burying Barriers to Customizing Software

Nikola Banovic, *University of Toronto, Canada*
 Fanny Chevalier, *OCAD University, Canada*
 Tovi Grossman, George Fitzmaurice, *Autodesk Research, Canada*

Proposes a methodology for empirically studying software customization and the impact of customization factors. Shows that increasing exposure and awareness of customization features, and adding social influence affects customization behavior.

ToCHI | End-User Debugging Strategies: A Sensemaking Perspective

Valentina Grigoreanu, *Microsoft Corporation, USA*
 Margaret Burnett, *Oregon State University, USA*
 Susan Wiedenbeck, *Drexel University, USA*
 Jill Cao, *Oregon State University, USA*
 Kyle Rector, *University of Washington, USA*
 Irwin Kwan, *Oregon State University, USA*

Contributes a sensemaking model for end-user debugging and new insights into debugging strategies and behaviors. Reveals implications for the design of spreadsheet tools to support end-user programmers’ sensemaking during debugging.

■ ALT.CHI | 12AB
ALT.CHI: HOME AND NEIGHBORHOOD

SESSION CHAIR: Josh Tanenbaum, *Simon Fraser University, Canada*

alt.chi | “I Had a Dream and I Built It” Power and Self-staging in Ubiquitous High-end Homes

Aviaja Borup Lynggaard, *Bang & Olufsen, Denmark*
 Marianne Graves Petersen, *Aarhus University, Denmark*
 Sam Hepworth, *Bang & Olufsen, Denmark*

Case study describing motivations for affluent people to live in smart home environments. In particular we describe how people use technologies for staging themselves and for exposing their power.

alt.chi | Pet Video Chat: Monitoring and Interacting with Dogs over Distance

Jennifer Golbeck, *University of Maryland, College Park, USA*
 Carman Neustaedter, *Simon Fraser University, Canada*

To investigate the potential of interactive dog cams, we designed a pet video chat system with remote interaction features and evaluated it with pet owners to understand its usage.

alt.chi | Vehicular Lifelogging: New Contexts and Methodologies for Human-Car Interaction

Joshua McVeigh-Schultz, Jennifer Stein, Jacob Boyle, Emily Duff, Jeff Watson, Avimaan Syam, Amanda Tasse, Simon Wiscombe, Scott Fisher, *University of Southern California, USA*

Presents novel design for automotive lifelogging that engages drivers in ongoing discoveries about their vehicle. Offers innovative storytelling and theatrical strategies focusing on “character” and larger social context surrounding driving.

alt.chi | Crowdsourcing an Emotional Wardrobe

Lucy Hughes, *University College London, UK*
 Douglas Atkinson, *Brunel, UK*
 Nadia Berthouze, *University College London, UK*
 Sharon Baurley, *Brunel University*

Investigating the possibility of designing a multi-modal language to enable the crowdsourcing of tactile perceptions of garments and the values that such a process would bring to our society.

alt.chi | TravelThrough: A Participatory-based Guidance System for Traveling through Disaster Areas

Lucy Gunawan, Siska Fitrianie, *Delft University of Technology, Netherlands*
 Zhenke Yang, *Netherlands Defence Academy, Netherlands*
 Willem-Paul Brinkman, *Delft University of Technology, Netherlands*
 Mark Neerinx, *TNO Human Factors, Netherlands*

We examine the potential of utilizing the affected population and prevalent mobile technology (with GPS) as distributed active sensors, sharing observations from the disaster areas, while guiding themselves to safety.

■ TECHNICAL PRESENTATIONS | 16AB**COMFORTABLE AGING**

SESSION CHAIR: Volker Wulf, *University of Siegen, Germany*

CASE STUDY | StoryPlace.me: The Path From Studying Elder Communication to a Public Location-Based Video Service

Frank Bentley, Santosh Basapur, *Motorola Mobility, USA*

We present the design path from studying communication across generations and distance to an open location-based media platform. Can help anyone involved in designing from field data.

PAPER | Enabling Self, Intimacy and a Sense of Home in Dementia: An Enquiry into Design in a Hospital Setting

Jayne Wallace, *Northumbria University, UK*
 Anja Thieme, Gavin Wood, Guy Schofield, Patrick Olivier,
Newcastle University, UK

An interactive art piece to meaningfully engage people with severe dementia in a hospital setting. Highlights design spaces for aspects of personhood, intimacy, sense of self and home in dementia.

PAPER | ICT-Development in Residential Care Settings: Sensitizing Design to the Life Circumstances of the Residents of a Care Home

Claudia Mueller, Cornelius Neufeldt, David Randall, Volker Wulf,
University of Siegen, Germany

The paper describes a case study in ICT use by and for elderly people in a care home. It rehearses methodological and analytic themes when working with this population.

PAPER | Investigating Interruptions in the Context of Computerised Cognitive Testing for Older Adults

Matthew Brehmer, Joanna McGrenere, Charlotte Tang,
 Claudia Jacova, *University of British Columbia, Canada*

Interruptions in the home pose a threat to the validity of self-administered computerised cognitive testing. Describes an experiment investigating the effects of interruption demand on older adults' test performance.

■ TECHNICAL PRESENTATIONS | 17AB**INTERACTIONS BEYOND THE DESKTOP**

SESSION CHAIR: Kent Lyons, *Intel Labs, USA*

NOTE | Beyond Stereo: An Exploration of Unconventional Binocular Presentation for Novel Visual Experience

Haimo Zhang, Xiang Cao, *Microsoft Research Asia, China*
 Shengdong Zhao, *National University of Singapore, Singapore*

Several novel and intriguing binocular visualization effects were explored, which could find potential application in visual design, scientific visualization, and cinema and games industries.

NOTE | 1€ Filter: A Simple Speed-based Low-pass Filter for Noisy Input in Interactive Systems

Géry Casiez, *University of Lille, France*
 Nicolas Roussel, *INRIA, France*
 Daniel Vogel, *University of Waterloo, Canada*

Presents a simple algorithm to filter noisy signals for high precision and responsiveness. The 1€ filter is easy to understand, implement, and tune for low jitter and lag.

PAPER | TeleHuman: Effects of 3D Perspective on Gaze and Pose Estimation with a Life-size Cylindrical Telepresence Pod

Kibum Kim, John Bolton, *Queen's University, Canada*
 Audrey Girouard, *Carleton University, Canada*
 Jeremy Cooperstock, *McGill University, Canada*
 Roel Vertegaal, *Queen's University, Canada*

Demonstrates a system for conveying 3D video conferencing using a cylindrical display. Provides user studies investigating effects of motion parallax and stereoscopy.

PAPER | MUSTARD: A Multi User See Through AR Display

Abhijit Karnik, Walterio Mayol-Cuevas, Sriram Subramanian,
University of Bristol, UK

Presents a multiuser see-through display using LC panels. Discusses use of polarized light for content delivery and unpolarized light for see-through operation. Evaluates conflict functions to reduce crosstalk between views.

PAPER | SphereAvatar: A Situated Display to Represent a Remote Collaborator

Oyewole Oyekoya, William Steptoe, Anthony Steed, *University College London, UK*

Describes a spherical display system for representing remote users. Extends our understanding of human visual perceptual ability to discern head orientation of a remote collaborator presented on a situated display.

■ TECHNICAL PRESENTATIONS | 18AB

RIGHT WHERE I AM: UX IN COMPLEX ENVIRONMENTS

SESSION CHAIR: Kari-Jouko Räihä, *University of Tampere, Finland*

NOTE | Trajectory-Aware Mobile Search

Shahriyar Amini, A.J. Brush, John Krumm, Jaime Teevan,
 Amy Karlson, *Microsoft Research, UK*

Describes a novel application of destination prediction to generate a trajectory-aware local search experience. The approach shows how predicting mobile users' destinations can help enhance user experience.

NOTE | 360° Panoramic Overviews for Location-Based Services

Alessandro Mulloni, Hartmut Seichter, *Graz University of Technology, Austria*
 Andreas Dünser, *HIT Lab NZ, New Zealand*
 Patrick Baudisch, *Hasso Plattner Institute, Germany*
 Dieter Schmalstieg, *Graz University of Technology, Austria*

Investigates how visualizing 360° panoramas of the environment surrounding the user can help her locating objects in the environment. Helps designers understanding how to integrate panoramic overviews into location-based services.

PAPER | On the Use of Virtual Environments for the Evaluation of Location-Based Applications

Arief Ernst Hühn, Vassilis-Javed Khan, *NHTV Breda University of Applied Sciences, Netherlands*
 Andrés Lucero, *Nokia Research Center, Finland*
 Paul Ketelaar, *Radboud University Nijmegen, Netherlands*

Case study describing two experiments which evaluate the intrusiveness (UX) of a location based advertising application using a novel CAVE-smartphone interface. Can help the evaluation and improvement of pervasive applications.

CASE STUDY | Case Study: Longitudinal Comparative Analysis for Analyzing User Behavior

Jhilmil Jain, *Google, USA*
 Susan Boyce, *Microsoft Research, USA*

Describes a four-step process for eliciting and analyzing user behavior with products over an extended period of time

PAPER | The Impact of Three Interfaces for 360-Degree Video on Spatial Cognition

Wutthigrai Boonsuk, Stephen Gilbert, Jonathan Kelly, *Iowa State University, USA*

Experiment compares three 2D displays of 360-degree video in terms of egocentric and exocentric spatial cognition. Results may assist designers of surveillance, teleoperation, or 3D gaming systems.



■ TECHNICAL PRESENTATIONS | 18CD

HEALTH AND CHILDREN

SESSION CHAIR: Julie Kientz, *University of Washington, USA*

PAPER | MOSOCO: A Mobile Assistive Tool to Support Children with Autism Practicing Social Skills in Real-Life Situations

Lizbeth Escobedo, *Universidad Autonoma de Baja California, Mexico*

David H. Nguyen, *Nokia Research Center, USA*

LouAnne Boyd, *NOC SELPA, USA*

Sen Hirano, *University of California, Irvine, USA*

Alejandro Rangel, Daniel Garcia-Rosas, *Universidad Autonoma de Baja California, Mexico*

Monica Tentori, *Universidad Autonoma de Baja California, Ensenada, Mexico*

Gillian Hayes, *University of California, Irvine, USA*

Usability and usefulness study of socially assistive technologies outside classrooms. A mobile assistive tool that could be useful in designing and evaluating mobile assistive technologies for use in real-life situations.

PAPER | Developing IDEAS: Supporting Children with Autism within a Participatory Design Team

Laura Benton, Hilary Johnson, Emma Ashwin, Mark Brosnan, Beate Grawemeyer, *University of Bath, UK*

Describes IDEAS, a design method for involving children with autism in the technology design process. Provides structured support for difficulties contributing to the design process within a collaborative design team.

PAPER | Supporting Face-To-Face Communication Between Clinicians and Children with Chronic Headaches Through a Zoomable Multi-Touch App

Juan Pablo Hourcade, Martha Driessnack, Kelsey Huebner, *University of Iowa, USA*

Provides evidence that zoomable multitouch app helps children with chronic headaches communicate more detailed descriptions of pain than paper-based alternatives.

PAPER | Design of an Exergaming Station for Children with Cerebral Palsy

Hamilton A. Hernandez, T.C. Nicholas Graham, *Queen's University, Canada*

Darcy Fehlings, *University of Toronto, Canada*

Lauren Switzer, *Bloorview Research Institute, Canada*

Zi Ye, Quentin Bellay, Md Ameer Hamza, Cheryl Savery, Tadeusz Stach, *Queen's University, Canada*

Describes the design of an exergaming station for children with cerebral palsy. Results present the design challenges of the station and suggest several lessons for game designers.

■ TECHNICAL PRESENTATIONS | 19AB

ORGANIZING THE RECOVERY

SESSION CHAIR: Ron Wakkary, *Simon Fraser University, Canada*

ToCHI | Repairing Infrastructure During Ongoing Crisis: Technology-Mediated Social Arrangements to Support Recovery

Bryan Semaan, Gloria Mark, *University of California, Irvine, USA*

Qualitative study describing how ICTs are used to continuously resolve breakdowns in infrastructure during ongoing disruption caused by violent conflict. Can assist in developing applications that aid in disaster relief.

ToCHI | Socio-cognitive Aspects of Interoperability: Understanding Communications among Different Agencies

Gyu Hyun Kwon, *Korea Advanced Institute of Science and Technology, Republic of Korea*

Tonya L. Smith-Jackson, Charles W. Bostian, *Virginia Tech, USA*

This research provides greater understanding of socio-cognitive aspects of interoperability in the context of public safety communications. The results directly benefit to elicit design requirements of new communication systems.

CASE STUDY | Disaster Symbolism and Social Media

Hiroko Wilensky, *University of California, Irvine, USA*

This paper addresses that symbols emerged in social media can be a valuable medium for people in crisis to find emotional support and to reconstruct value system and identity.

CASE STUDY | A Study of Reconstruction Watcher in Disaster Area

Yoshia Saito, Yasuhiro Fujihara, Yuko Murayama, *Iwate Prefectural University, Japan*

We propose a Reconstruction Watcher which lets people share reconstruction progress visually to gain public understanding and to support the disaster area.

NOTE | Brainstorming for Japan: Rapid Distributed Global Collaboration for Disaster Response

Michael Muller, Sacha Chua, *IBM, USA*

Describes development in human, intellectual, and social relations during an employee brainstorm to support Japan following 2011 disasters. This case shows new online community genre of remote disaster communities.

■ SPECIAL INTEREST GROUP | 11A

CHANGING REQUIREMENTS TO HCI FUNDING: A GLOBAL PERSPECTIVE

ORGANIZERS

Vanessa Evers, *University of Twente, Netherlands*
 Stephen Brewster, *University of Glasgow, UK*
 Jonathan Lazar, *Towson University, USA*
 Zhengjie Liu, *Sino-European Usability Center, China*
 Gary Marsden, *University of Cape Town*
 Raquel Prates, *Federal University of Minas Gerais, Brazil*
 Femke Nijboer, *University of Twente, Netherlands*

The requirements for funding for HCI research are changing globally. We review with panel members and high-level grant decision makers from different continents how requirements change and what that means.

■ SPECIAL INTEREST GROUP | 11B

DIGITAL ART: EVALUATION, APPRECIATION, CRITIQUE (INVITED SIG)

ORGANIZERS

David England, *LJMU, UK*
 Jill Fantauzzacoffin, *Georgia Tech, USA*
 Nick Bryan-Kinns, *Queen Mary, University of London, UK*
 Celine Latulipe, *University of North Carolina at Charlotte, USA*
 Linda Candy, *Sydney University*
 Jennifer Sheridan, *BigDog Interactive Ltd., UK*

We examine the evaluation of Digital Art and how ideas on evaluation can be exchanged between the arts and HCI. We start by a critique of standard approaches to evaluation.

HIGHLIGHT ON POSTERS BREAK

COMMONS (EXHIBIT HALL 4) | 10:50-11:30

Posters are located in the Commons (Exhibit Hall 4, Level 1). Poster authors are scheduled to stand by their posters at this time. Please visit the posters each day to see all of the exciting work being done and discuss new ideas with poster presenters.

Works-In-Progress focusing on:

- Child-computer Interaction (WIP300 - WIP307)
- Sustainability (WIP400 - WIP407)
- Engineering (WIP500 - WIP515)
- Games and Entertainment (WIP600 - WIP612)
- Health (WIP700 - WIP718)
- Other Topics (WIP719 - WIP834)

INTERACTIVITY | 10:50-11:30

The Interactivity Permanent Collection will be open during this break in the Commons (Exhibit Hall 4, Level 1). Presenters will be present.



■ INVITED TALK | BALLROOM D

INTERACTION SCIENCE IN THE AGE OF MAKERS AND INSTRUCTABLES

Stuart Card, *Stanford University, USA*

Human-Computer Interaction now is almost a different discipline than at the time of the first CHI conference. The field has moved from command-line interfaces for time-sharing to gesture interfaces for brain wave sleep monitors on your telephone. As Hal Varian has pointed out, we are in one of those unusual combinatorial periods in history where technology offers us a rich set of recombinable components that have been perfected but not yet incorporated into the fabric of society. Furthermore, significant innovations can now be done by smaller teams at more rapid rates and lower cost than before. In fact, the technology has allowed the rise of a digital culture of DIY hobbyists, exemplified by the Maker, Instructables, and Quantified Self Movements, who emphasize exploring the newly possible and just-in-time self-education. There are at least two interesting implications for HCI, I think. First is that we are in a new golden age for HCI, like the heady days when the GUI was being invented. New I/O devices are needed, new major interaction paradigms are possible, and CHI conferences should become more interesting. Second, the state of current technology and the spirit of the Maker Movement suggest a means for making progress on one of HCI's oldest structural problems: how to ground the field, accelerate its progress, and make it cumulative by fashioning theories and incorporating them into practice. It is this latter point on which I wish to dwell. In this talk, I will attempt to sketch out, in the spirit of the times, what an interaction science for HCI could look like, how it might be incorporated into practice, and how it might be taught.

About Stuart Card: Stuart Card works on the theory and design of human machine systems. Until his retirement, he was a Senior Research Fellow at the Xerox Palo Alto Research Center and head of its User Interface Research group. His study of input devices led to the Fitts's Law characterization of the mouse and was a major factor leading to the mouse's commercial introduction by Xerox. His group developed theoretical characterizations of human-machine interaction, including the Model Human Processor, the GOMS theory of user interaction, information foraging theory, theories of the sensemaking process of knowledge aggregation, developments in information visualization, and statistical characterizations of Internet use. The work of his group has resulted in a dozen Xerox products and contributed to the founding of three software companies. Card is a member of the National Academy of Engineering and the recipient of the 2007 Bower Award and Prize for Achievement in Science for fundamental contributions of the fields of human-computer interaction and information visualization. He is an ACM Fellow, the recipient of the ACM Computer-Human Interaction Lifetime Achievement Award, IEEE VGTC Visualization Career Award, and a member of the CHI-Academy. Card received an A.B. degree in physics from Oberlin College and a Ph.D. degree in psychology from Carnegie Mellon University. He holds 50 patents and has published 90 papers and three books. He is presently a Consulting Professor in the Computer Science Dept. at Stanford University.

■ TECHNICAL PRESENTATIONS | BALLROOM E

BIGGER IS BETTER: LARGE AND MULTIPLE DISPLAY ENVIRONMENTS

SESSION CHAIR: David Dearman, *Nokia Research Center, USA*

ToCHI | XICE Windowing Toolkit: Seamless Display Annexation

Richard Arthur, Dan Olsen, *Brigham Young University*

Presents a vision for safer, flexible, ubiquitous nomadic computing. Demonstrates a resource-efficient approach to annexing screens in the environment. The next level of mobile computing.

PAPER | ReticularSpaces: Activity-Based Computing Support for Physically Distributed and Collaborative Smart Spaces

Jakob Bardram, Sofiane Gueddana, Steven Houben, Søren Nielsen, *IT University of Copenhagen, Denmark*

ReticularSpaces extends smart spaces technology with Activity-Based Computing. It offers a unified user interface across multiple displays designed to support complex information management, collaboration and mobility.

PAPER | Regional Undo/Redo Techniques for Large Interactive Surfaces

Thomas Seifried, Christian Rendl, Michael Haller, *Media Interaction Lab, Austria*
Stacey Scott, *University of Waterloo, Canada*

Explores the problem of undo/redo techniques on large interactive surfaces in co-located collaborative work. Provides interaction designers with design recommendations for regional undo/redo techniques.

PAPER | Tangible Remote Controllers for Wall-Size Displays

Yvonne Jansen, Pierre Dragicevic, Jean-Daniel Fekete, *INRIA, France*

Describes customizable tangible remote controllers to interact with wall-size displays. Results from a controlled user study support their eyes-free use for visual exploration tasks.

■ PANEL | BALLROOM F
SOCIAL SUSTAINABILITY: AN HCI AGENDA
PANELISTS

Daniela Busse, *Samsung Research, USA*
 Eli Blevis, *Indiana University, USA*
 Richard Beckwith, *Intel Research, USA*
 Shaowen Bardzell, *Indiana University, USA*
 Phoebe Sengers, *Cornell University, USA*
 Bill Tomlinson, *University of California, Irvine, USA*
 Lisa Nathan, *University of British Columbia, Canada*
 Samuel Mann, *Otago Polytechnic, New Zealand*

The panel will capture some of the breadth and depth of the current CHI discourse on Social Sustainability, and discuss a forward-looking research agenda.

■ TECHNICAL PRESENTATIONS | BALLROOM G
WHAT A LOVELY GESTURE

SESSION CHAIR: Hrvoje Benko, *Microsoft Research, USA*

PAPER | Gesture Coder: A Tool for Programming Multi-Touch Gestures by Demonstration


Hao Lü, *University of Washington, USA*
 Yang Li, *Google Research, USA*

We present Gesture Coder, a tool for programming multi-touch gestures by demonstration. It significantly lowers the threshold of programming multi-touch gestures.

PAPER | Proton: Multitouch Gestures as Regular Expressions

Kenrick Kin, Björn Hartmann, *University of California, Berkeley, USA*
 Tony DeRose, *Pixar Animation Studios, USA*
 Maneesh Agrawala, *University of California, Berkeley, USA*

Describes a framework that allows developers to declaratively specify multitouch gestures as regular expressions. Supports static analysis of gesture conflicts and the creation of gestures via a graphical editor.

PAPER | Bootstrapping Personal Gesture Shortcuts with the Wisdom of the Crowd and Handwriting Recognition

Tom Ouyang, *Massachusetts Institute of Technology, USA*
 Yang Li, *Google Research, USA*

Presents a novel approach for bootstrapping personal gesture shortcuts, using a combination of crowdsourcing and handwriting recognition. Makes gesture-based interaction more scalable by alleviating the effort of defining gesture shortcuts beforehand.

CASE STUDY | Self-Revealing Gestures: Teaching New Touch Interactions in Windows 8

Kay Hofmeester, Jennifer Wolfe, *Microsoft Research, USA*

Case study describing a design process for a teaching method for new touch gestures in Windows 8. Can assist designers in understanding how touch interactions can be taught during interaction.

■ TECHNICAL PRESENTATIONS | 12AB
TWEET, TWEET, TWEET!

SESSION CHAIR: Sadat Shami, *IBM Research, USA*

PAPER | Designing Social Translucence Over Social Networks


Eric Gilbert, *Georgia Tech, USA*

Social translucence is a landmark theory in social computing. However, we argue that it breaks down over modern social network sites and build a theory relating network structure to design.

PAPER | A Longitudinal Study of Facebook, LinkedIn, & Twitter Use

Anne Archambault, *Microsoft Corporation, USA*
 Jonathan Grudin, *Microsoft Research, UK*

Our longitudinal study of attitudes and behaviors around popular social networking sites in an enterprise context will contribute to understanding and potentially to design in this dynamic technology area.

NOTE | Breaking News on Twitter

Mengdie Hu, *Georgia Tech, USA*
 Shixia Liu, Furu Wei, *Microsoft Research Asia, China*
 Yingcai Wu, *University of California at Davis, USA*
 John Stasko, *Georgia Tech, USA*
 Kwan-Liu Ma, *University of California at Davis, USA*

Case study of how Twitter broke and spread the news of Osama Bin Laden's death. Contributes to our understanding of trust and information flow on Twitter.

NOTE | The Twitter Mute Button: A Web Filtering Challenge

Jennifer Golbeck, *University of Maryland, College Park, USA*

We describe the challenge of selectively filtering Twitter content and illustrate this through a pilot study on filtering spoilers posted about televised events.



CASE STUDY | Nokia Internet Pulse: A Long Term Deployment and Iteration of a Twitter Visualization

Joseph 'Jofish' Kaye, *Nokia Research Center, Finland*
Anita Lillie, *LinkedIn, USA*
Deepak Jagdish, James Walkup, *Nokia Research Center, Finland*
Rita Parada, *Nokia Design, USA*
Koichi Mori, *Nokia Research Center, Palo Alto, USA*

This case study discusses the iterative design of a corporate system for visualizing tweets, showing sentiment and word frequency in an ambient display of current and recent public discussion.

■ TECHNICAL PRESENTATIONS | 16AB

BETTER TOGETHER

SESSION CHAIR: Gary Hsieh, *Michigan State University, USA*

ToCHI | Mechanisms for Collaboration: A Design and Evaluation Framework for Multi-User Interfaces

Nicola Yuill, *University of Sussex, UK*
Yvonne Rogers, *University College London, UK*

Comprehensive conceptual framework for considering design and evaluation dimensions for how multi-user interfaces can best support collaboration in work and play across the range of users.

PAPER | Diversity among Enterprise Online Communities: Collaborating, Teaming, and Innovating through Social Media

Michael Muller, Kate Ehrlich, *IBM, USA*
Tara Matthews, *IBM Almaden, USA*
Adam Perer, *IBM, USA*
Inbal Ronen, Ido Guy, *IBM Research, USA*

We describe different types of enterprise online communities, with implications for community success metrics, tools to support those communities, organizational design, and theories of online communities and virtual teams.

PAPER | Homeless Young People on Social Network Sites

Jill Woelfer, David Hendry, *University of Washington, USA*

Contributes to the HCI literatures on homelessness and social network sites. Provides implications for social intervention and technical design related to social network sites and homeless young people.

PAPER | Supporting the Social Context of Technology Appropriation: On a Synthesis of Sharing Tools and Tool Knowledge

Sebastian Draxler, Gunnar Stevens, Martin Stein, Alexander Boden, David Randall, *University of Siegen, Germany*

We introduce a holistic appropriation support approach, using Eclipse as an example. We address especially the entanglement of social aspects (learning, trust) and technical aspects (tailoring, configuring, installing) of appropriation.

■ TECHNICAL PRESENTATIONS | 17AB

ME & MY MOBILE

SESSION CHAIR: Lynne Baillie, *Glasgow Caledonian University, UK*

PAPER | 'Timid Encounters': A Case Study in The Use of Proximity-Based Mobile Technologies



Christian Licoppe, Yoriko Inada, *TELECOM ParisTech, France*

User case study of proximity-sensitive mobile technologies (as exemplified by the mobile game Dragon Quest 9) in Japan and in France. It introduces the notion of "timid encounters".

PAPER | Characterizing Web Use on Smartphones

Chad Tossell, Philip Kortum, Ahmad Rahmati, Clayton Shepard, Lin Zhong, *Rice University, USA*

Establishes empirical patterns of behavior for web use on smartphones including visits to native applications, browser content and physical locations. Describes user differences and targeted design recommendations for smartphones.

PAPER | Narratives of Satisfying and Unsatisfying Experiences of Current Mobile Augmented Reality Applications

Thomas Olsson, *Tampere University of Technology, Finland*
Markus Salo, *University of Jyväskylä, Finland*

We present an online survey about user experience of mobile augmented reality applications currently available in the market. We highlight the most satisfying and unsatisfying experiences and discuss design implications.

NOTE | Exploring User Motivations for Eyes-free Interaction on Mobile Devices

Bo Yi, *National University of Singapore, Singapore*
 Xiang Cao, *Microsoft Research Asia, China*
 Morten Fjeld, *Chalmers University of Technology, Sweden*
 Shengdong Zhao, *National University of Singapore, Singapore*

User-centered exploration of user motivations in choosing eyes-free technologies for mobile interaction. Increase understanding of eyes-free interaction by systematically examining motivations and establish high level design implications for satisfying user motivations.

CASE STUDY | 123D Sculpt: Designing a Mobile 3D Modeling Application for Novice Users

Leslie Preddy, Alexander Rice-Khouri, Greg Fowler, Anna Romanovska, Hans-Frederick Brown, *Autodesk Canada, Canada*

Case study describing design and development of a touch-driven, 3D modeling application for a mobile device. Can assist designers in tailoring the user experience to accommodate novice and expert users.

■ TECHNICAL PRESENTATIONS | 18AB
UNDERSTANDING GAMERS

SESSION CHAIR: Peter Tolmie, *University of Nottingham, UK*

PAPER | Protecting Artificial Team-Mates: More Seems Like Less

Tim Merritt, Kevin McGee, *National University of Singapore, Singapore*

Describes game-based study that examines motivation and rationale for cooperation with team-mates. Can assist developers in understanding cooperation with human and artificial team-mates.

CASE STUDY | The Reality of Fantasy: Uncovering Information-Seeking Behaviors and Needs in Online Fantasy Sports

Sandra Hirsh, *San Jose State University, USA*
 Christine Anderson, *Sportvision, USA*
 Matthew Caselli, *San Jose State University, USA*

Presents a first study of information-seeking behaviors and needs for online fantasy sports players across different sports, and identifies tools they might want and need for better performances and experiences.

NOTE | Online Gaming Motivations Scale: Development and Validation

Nick Yee, Nicolas Ducheneaut, Les Nelson, *Palo Alto Research Center, USA*

Cross-cultural factor validation and predictive validation of online gaming motivations scale. Provides important theoretical bridge in examining links between demographics, motivation, engagement, and behavioral outcomes in games and gamified applications.

NOTE | Experimental Investigation of Human Adaptation to Change in Agent's Strategy through a Competitive Two-Player Game

Kazunori Terada, *Gifu University, Japan*
 Seiji Yamada, *National Institute of Informatics, Japan*
 Akira Ito, *Gifu University, Japan*

Investigates how human adapt differently to a change in strategy of robot and human. Revealed adaptation is faster when a human is competing with robot than with another human.

NOTE | Through the Azerothian Looking Glass: Mapping In-Game Preferences to Real World Demographics

Nick Yee, Nicolas Ducheneaut, *Palo Alto Research Center, USA*
 Han-Tai Shiao, *University of Minnesota, USA*
 Les Nelson, *Palo Alto Research Center, USA*

Examines how in-game behaviors map onto real world demographic variables. Provides empirical data to prioritize or dynamically tailor game mechanisms given a target demographic audience.

CASE STUDY | User Testing of a Language Learning Game for Mandarin Chinese

Lindsay Grace, Martha Castaneda, Jeannie Ducher, *Miami University, USA*

Case study describing the user evaluation of a language learning game for Mandarin Chinese. Can assist designers in understanding user response to gaming environments for entertaining and educating adult learners.



■ ALT.CHI | 18CD

ALT.CHI: DESIGN MATTERS

SESSION CHAIR: Jan Borchers, *RWTH Aachen University, Germany*

alt.chi | Synthetic Space: Inhabiting Binaries

Yuichiro Takeuchi, *Sony Computer Science Laboratories, Inc., Japan*

Presents the concept of Synthetic Space—architectural space fused with the properties of digital bits. Provides a new research direction for HCI.

alt.chi | I, the Device: Observing Human Aversion from an HCI Perspective

Ricardo Jota, Pedro Lopes, Joaquim Jorge, *INESC-ID, Portugal*

We describe our experience in designing a system that would render a human operators obsolete and discuss how user aversion toward HCI developments helps practitioners understand users and improve design.

alt.chi | When Mobile Phones Expand Into Handheld Tabletops

Jürgen Steimle, Simon Olberding, *Technische Universität Darmstadt, Germany*

Suggests a handheld version of tabletops, which users can establish by unrolling a flexible display on-the-go. Introduces a theoretical framework for such devices and presents a first implementation.

alt.chi | A Candor in Reporting: Designing Dexterously for Fire Preparedness

Yoko Akama, *RMIT University, Australia*
Ann Light, *Northumbria University, UK*

Study of improvisational practices illustrates weakness of design research accounts that stress reproducibility. Candid reflection encourages learning about why and what we design, as well as how.

alt.chi | The Iron Man Phenomenon, Participatory Culture, & Future Augmented Reality Technologies

Isabel Pedersen, Luke Simcoe, *Ryerson University, Canada*

Case study on how the Iron Man phenomenon causes audiences to discursively relate to Augmented Reality (AR) technology through fandom. Suggests unique ways to better analyze users' expectations and desires.

■ TECHNICAL PRESENTATIONS | 19AB

CROWDSOURCING AND PEER PRODUCTION II

SESSION CHAIR: Erika Poole, *Pennsylvania State University, USA*

PAPER | Habit as an Explanation of Participation in an Online Peer-production Community

Donghee Wohn, Alcides Velasquez, Tor Bjornrud, *Michigan State University, USA*
Cliff Lampe, *University of Michigan, USA*

We examine the construct of habit as a type of non-conscious behavior in online peer-production communities; and how motivations and habits explain people's use of specific features.

PAPER | Evaluating Compliance-Without-Pressure Techniques for Increasing Participation in Online Communities

Mikhail Masli, Loren Terveen, *University of Minnesota, USA*

Field study and follow-up survey evaluating two compliance-without-pressure techniques in a working social production community. Can assist researchers and practitioners boost participation in online communities they manage.

PAPER | Social Desirability Bias and Self-Reports of Motivation: A Cross-Cultural Study of Amazon Mechanical Turk in the US and India

Judd Antin, *Yahoo! Research, USA*
Aaron Shaw, *University of California, Berkeley, USA*

Demonstrates that survey self-reports of motivation to participate in crowdsourcing can be inaccurate due to social desirability bias. Shows differential patterns of motivation and bias between US and India samples.

NOTE | Deploying MonoTrans Widgets in the Wild

Chang Hu, Philip Resnik, Yakov Kronrod, Benjamin Bederson, *University of Maryland, USA*

Our first attempt to deploy a crowd-sourced monolingual translation system to the wild finds interesting lesson dealing with crowds with different sizes simultaneously.

NOTE | A Quantitative Explanation of Governance in an Online Peer-Production Community

Chandan Sarkar, Donghee Wohn, *Michigan State University, USA*
Cliff Lampe, *University of Michigan, USA*
Kurt DeMaagd, *Michigan State University, USA*

Decision making processes are an integral part of online community governance. Understanding the relationship between user feedback and editorial deletion decisions has broader implications for design, infrastructure, and sustainability for communities.

LUNCH BREAK | 12:50-14:30

There are many restaurants available in the area. Please note that concession stands will NOT be available during this lunch break.

■ SPECIAL INTEREST GROUP INVITED | 11A**PARTICIPATION AND HCI: WHY INVOLVE PEOPLE IN DESIGN?****ORGANIZERS**

John Vines, Rachel Clarke, Tuck Leong, *Newcastle University, UK*
John McCarthy, *University College Cork, Ireland*
Ole Sejer Iversen, *University of Aarhus, Denmark*
Peter Wright, Patrick Olivier, *Newcastle University, UK*

In this invited SIG we discuss the role of participation in HCI. Positions will be presented from four experts, provoking us to discuss why we include people in design processes.

■ SPECIAL INTEREST GROUP | 11B**GAZE INTERACTION IN THE POST-WIMP WORLD****ORGANIZERS**

Andreas Bulling, *University of Cambridge, UK*
Raimund Dachselt, *University of Magdeburg, Germany*
Andrew Duchowski, *Clemson University, USA*
Robert Jacob, *Tufts University, USA*
Sophie Stellmach, *University of Magdeburg, Germany*
Veronica Sundstedt, *Blekinge Institute of Technology, Sweden*

This SIG meeting invites researchers and practitioners to get an insight in and to discuss the potential of gaze interaction for diverse application areas, interaction tasks, and multimodal user interfaces.



■ TECHNICAL PRESENTATIONS | BALLROOM E

USE THE FORCE

SESSION CHAIR: Mike Horn, *Northwestern University, USA*

PAPER | Evaluation of Human Tangential Force Input Performance

Bhoram Lee, Hyunjeong Lee, Soo-Chul Lim, Hyungkeew Lee, Seungju Han, Joonah Park, *Samsung Advanced Institute of Technology, Republic of Korea*

Presents guidelines for UI design based on the tangential force applied by a user. Can assist in developing effective force-based interface.

PAPER | PocketNavigator: Studying Tactile Navigation Systems In-Situ

Martin Pielot, Benjamin Poppinga, Wilko Heuten, Susanne Boll, *University of Oldenburg, Germany*

Provides evidence from a study of a pedestrian navigation system published on the Android Market which shows that vibro-tactile navigation instructions can reduce the traveler's level of distraction.

PAPER | Funneling and Saltation Effects for Tactile Interaction with Virtual Objects

Jaedong Lee, Youngsun Kim, Gerard Kim, *Korea University, Republic of Korea*

We have newly verified for the first time that funneling and saltation, the two main perceptual tactile illusions exist also on virtual objects without any physical medium.

NOTE | Using Shear as a Supplemental Two-Dimensional Input Channel for Rich Touchscreen Interaction

Chris Harrison, Scott Hudson, *Carnegie Mellon University, USA*

In this note, we suggest using a largely unutilized touch input dimension: shear (force tangential to a screen's surface). This provides a supplemental analog 2D input channel.

NOTE | GyroTab: A Handheld Device that Provides Reactive Torque Feedback

Akash Badshah, *Massachusetts Institute of Technology, USA*
Sidhant Gupta, *University of Washington, USA*
Daniel Morris, *Microsoft Research, UK*
Shwetak Patel, *University of Washington, USA*
Desney Tan, *Microsoft Research, UK*

Presents GyroTab, a flat handheld system that utilizes the gyro effect to provide torque feedback on mobile devices. The feedback can be used to convey the feeling of weight or inertia.

■ PANEL | BALLROOM F

HOW-TO-GUIDE: COLLABORATING WITH EXECUTIVES IN A PRO-DESIGN WORLD.

PANELISTS

Iram Mirza, Jannie Lai, *Citrix Systems, USA*
Craig Villamor, *Salesforce.com, USA*
Larry Tesler, *Consultant*
Mark Rolston, *frog design Inc., New York, USA*

This panel includes designers, product managers, and executives from various industries. The discussion focuses on how designers can collaborate effectively with executives to create a design-driven strategy from concept to implementation.

■ TECHNICAL PRESENTATIONS | BALLROOM G

HUMAN PERFORMANCE GIVES US FITTS'

SESSION CHAIR: Olivier Chapuis, *Univ Paris-Sud, France*

PAPER | Accurate Measurements of Pointing Performance from In Situ Observations

Krzysztof Gajos, Katharina Reinecke, Charles Herrmann, *Harvard University, USA*

Method for obtaining lab-quality measurements of pointing performance from unobtrusive observations of natural in situ interactions.

PAPER | A General-Purpose Target-Aware Pointing Enhancement Using Pixel-Level Analysis of Graphical Interfaces

Morgan Dixon, James Fogarty, Jacob Wobbrock, *University of Washington, USA*

We present a general-purpose implementation of a target aware pointing technique, functional across an entire desktop.

NOTE | Assisting Hand Skill Transfer of Tracheal Intubation Using Outer-Covering Haptic Display

Vibol Yem, Hideaki Kuzuoka, *University of Tsukuba, Japan*
 Naomi Yamashita, *NTT Communication Science Laboratories, Japan*
 Ryota Shibusawa, Hiroaki Yano, Jun Yamashita, *University of Tsukuba, Japan*

Proposes a novel haptic device. The device can effectively guide human hand motion with significantly lower detection threshold than conventional devices.

NOTE | An Investigation of Fitts' Law in a Multiple-Display Environment

Dugald Hutchings, *Elon University, USA*

Experiment showing that Fitts' Law may underestimate difficulty of pointing tasks on multiple-monitor systems. Pertinent for designers trying applying Fitts' Law to interface design for multiple-display environments.

PAPER | Extending Fitts' Law to Account for the Effects of Movement Direction on 2D Pointing

Xinyong Zhang, *Renmin University of China, China*
 Hongbin Zha, *Peking University, China*
 Wenxin Feng, *Renmin University of China, China*

Improves understanding of modeling 2D pointing using Fitts' law, with an intuitive explanation for the new model. Provides practitioners and researchers with guidelines for UI and Fitts task experiment designs.

■ TECHNICAL PRESENTATIONS | 12AB

USABILITY AND USER RESEARCH

SESSION CHAIR: Anna Cox, *University College London, UK*

PAPER | Identifying Usability Issues via Algorithmic Detection of Excessive Visual Search

Corey Holland, Oleg Komogortsev, Dan Tamir, *Texas State University, USA*

Presents an evaluation of algorithms for the automated detection of excessive visual search, a technique that can be utilized to aid in the identification of usability problems during usability testing.

PAPER | An Evaluation of How Small User Interface Changes Can Improve Scientists' Analytic Strategies

Radu Jianu, David Laidlaw, *Brown University, USA*

We presented results from a quantitative user study showing that controlled changes in the interface of an analysis system can be employed to correct deficiencies in users' analytic behavior.

PAPER | Mouse Tracking: Measuring and Predicting Users' Experience of Web-based Content

Vidhya Navalpakkam, Elizabeth Churchill, *Yahoo! Research, USA*

Demonstrates that mouse-tracking offers valuable signals about user attention and experience on web pages, and can even help detect user frustration and reading struggles. Applications include evaluating content layout and noticeability.

NOTE | Evaluating the Benefits of Real-time Feedback in Mobile Augmented Reality with Hand-held Devices



Can Liu, *RWTH Aachen University, Germany*
 Stephane Huot, *Univ Paris-Sud, France*
 Jonathan Diehl, *RWTH Aachen University, Germany*
 Wendy Mackay, *INRIA, France*
 Michel Beaudouin-Lafon, *Univ Paris-Sud, France*

Adding real-time feedback to a mobile Augmented Reality system to reflect the status of the physical objects being manipulated improves performance by reducing the division of attention.

NOTE | How Do We Find Personal Files?: The Effect of OS, Presentation & Depth on File Navigation

Ofer Bergman, *Bar-Ilan University, Israel*
 Steve Whittaker, *University of California at Santa Cruz, USA*
 Mark Sanderson, *RMIT University, Australia*
 Rafi Nachmias, *Tel-Aviv University, Israel*
 Anand Ramamoorthy, *Universiteit Ghent, Belgium*

A large scale study testing the effects of OS, interface presentation and folder depth on personal file navigation. Informs improved folder system design by increasing efficiency in finding files.

■ TECHNICAL PRESENTATIONS | 16AB

GROUPS @ WORK

SESSION CHAIR: Eric Gilbert, *Georgia Tech, USA*

PAPER | The Impact of Communication Structure on New Product Development Outcomes

Marcelo Cataldo, *Carnegie Mellon University, USA*
 Kate Ehrlich, *IBM, USA*

Our study found that hierarchical communication patterns improve delivery performance but hinder quality outcomes in new product development projects. On the other hand, small-world communication structures exhibited opposite effects.



PAPER | One of the Gang: Supporting In-group Behavior for Embodied Mediated Communication

Irene Rae, *University of Wisconsin-Madison, USA*
Leila Takayama, *Willow Garage, USA*
Bilge Mutlu, *University of Wisconsin-Madison, USA*

Presents the results from an experiment, which examines how verbal and visual framing affect collaboration using mobile remote presence systems. Can inform the design of embodied remote collaboration systems.

PAPER | Cross-Cutting Faultlines of Location and Shared Identity in the Intergroup Cooperation of Partially Distributed Groups

Amy Volda, *University of California, Irvine, USA*
Nathan Bos, *Johns Hopkins University, USA*
Judith Olson, Gary Olson, Lauren Dunning, *University of California, Irvine, USA*

Presents results of a study examining the influence of location and shared identity in distributed work.

PAPER | Time Travel Proxy: Using Lightweight Video Recordings to Create Asynchronous, Interactive Meetings

John Tang, *Microsoft Research, UK*
Jennifer Marlow, *Carnegie Mellon University, USA*
Aaron Hoff, Asta Roseway, Kori Inkpen, *Microsoft Research, UK*
Chen Zhao, *Microsoft Research, USA*
Xiang Cao, *Microsoft Research Asia, China*

Time Travel Proxy enables interactive, asynchronous meetings through recorded videos. A field study in actual usage reflects on the design concepts and identifies opportunities for future refinement.

■ TECHNICAL PRESENTATIONS | 17AB

DO YOU SEE WHAT EYE SEE

SESSION CHAIR: Andrew Duchowski, *Clemson University, USA*

PAPER | Look & Touch: Gaze-supported Target Acquisition



Sophie Stellmach, Raimund Dachselt, *University of Magdeburg, Germany*

Describes and compares interaction techniques for combining gaze and touch input from a handheld for target selection. Can help improving the performance and usability for the interaction with distant displays.

PAPER | Gaze-Augmented Think-Aloud as an Aid to Learning

Sarah Vitak, *Scripps College, USA*
John Ingram, *University of the South, USA*
Andrew Duchowski, Steven Ellis, Anand Gramopadhye, *Clemson University, USA*

The efficacy of Gaze-Augmented Think Aloud for teaching visual search strategy to learners is demonstrated empirically. An expert's gaze visualization indicates what to look for and what to avoid.

PAPER | An Exploratory Study of Eye Typing Fundamentals: Dwell Time, Text Entry Rate, Errors, and Workload

Kari-Jouko Raiha, Saira Ovaska, *University of Tampere, Finland*

Presents a study of experienced users of eye typing and a detailed comparison of various metrics for analyzing their performance. Suggests a new metric for estimating expert performance.

PAPER | Increasing the Security of Gaze-Based Cued-Recall Graphical Passwords Using Saliency Masks

Andreas Bulling, *University of Cambridge, UK*
Florian Alt, Albrecht Schmidt, *University of Stuttgart, Germany*

Describes a gaze-based authentication scheme that uses saliency maps to mask image areas that most likely attract visual attention. Can significantly increase the security of gaze-based graphical passwords.

■ TECHNICAL PRESENTATIONS | 18AB

HOME AND FAMILY

SESSION CHAIR: Andrea Grimes Parker, *Georgia Tech, USA*

ToCHI | The Organization of Home Media

Robin Sease, David McDonald, *University of Washington, USA*

Qualitative study of media management strategies of users with large collections illustrates that management idiosyncrasies are more common than participants believed. Our results inform the design of media management software.

PAPER | "You're Capped!" Understanding the Effects of Bandwidth Caps on Broadband Use in the Home

Marshini Chetty, *Georgia Tech, USA*
Richard Banks, A.J. Brush, *Microsoft Research, UK*
Jonathan Donner, *Microsoft Research India, Bangalore, India*
Rebecca Grinter, *Georgia Tech, USA*

Study of households living with bandwidth caps. Challenges assumptions about users having unlimited Internet connections and suggests design implications for those on capped bandwidth plans.

PAPER | Age Differences in Exploratory Learning from a Health Information Website

Jessie Chin, Wai-Tat Fu, *University of Illinois at Urbana-Champaign, USA*

An empirical study examined age differences in learning health information with recommended links having implications on designs of health information interfaces that facilitate search and learning for different age groups.

PAPER | Income, Race, and Class: Exploring Socioeconomic Differences in Family Technology Use

Sarita Yardi, Amy Bruckman, *Georgia Tech, USA*

Comparison of technology adoption and use among low socioeconomic status and high socioeconomic status families. Shows benefits of studying and designing for diverse users.

■ TECHNICAL PRESENTATIONS | 18CD
DESIGNING FOR LEARNERS' COMPLEX NEEDS

SESSION CHAIR: Hilary Hutchinson, *Google, USA*

PAPER | The eLabBench in the Wild - Supporting Exploration in a Molecular Biology Lab

Aurélien Tabard, Juan David Hincapié Ramos, Jakob Bardram, *IT University of Copenhagen, Denmark*

Describes the long-term deployment of the eLabBench, a tabletop system for laboratories. We highlight its impact on biologists' practices in offices and labs and discuss implications for tabletop research.

PAPER | How Students Find, Evaluate and Utilize Peer-Collected Annotated Multimedia Data in Science Inquiry with Zydeco

Alex Kuhn, Brenna McNally, Shannon Schmoll, Clara Cahill, Wan-Tzu Lo, Chris Quintana, Ibrahim Delen, *University of Michigan, USA*

Presents a study on how students (ages 11-13) search for, evaluate, and use annotated student-collected data. This can assist others developing inquiry systems or data-rich software for students.

PAPER | Phylo-Genie: Engaging Students in Collaborative 'Tree-Thinking' through Tabletop Techniques

Bertrand Schneider, *Stanford University, USA*
 Megan Strait, *Tufts University, USA*
 Laurence Muller, *Harvard University, USA*
 Sarah Elfenbein, *Yale University, USA*
 Orit Shaer, *Wellesley College, USA*
 Chia Shen, *Harvard University, USA*

Describes the design and implementation of an interactive tabletop system, Phylo-Genie, which supports the learning of phylogeny. Study shows that Phylo-Genie promotes engagement, collaboration, and learning compared to traditional learning tools.

CASE STUDY | The Student Activity Meter for Awareness and Self-reflection

Sten Govaerts, Katrien Verbert, *University of Leuven, Belgium*
 Erik Duval, *KU Leuven, Belgium*
 Abelardo Pardo, *University Carlos III of Madrid, Spain*

Describes the iterative design and evaluation of visualizations to improve self-reflection and awareness for learners and teachers. The methodology can be valuable for other visualization tools, e.g. in personal informatics.

■ TECHNICAL PRESENTATIONS | 19AB
WITH A LITTLE HELP FROM MY FRIENDS

SESSION CHAIR: Amy Hurst, *Carnegie Mellon, USA*

PAPER | Perceptions of Facebook's Value as an Information Source

Cliff Lampe, *University of Michigan, USA*
 Jessica Vitak, Rebecca Gray, Nicole Ellison, *Michigan State University, USA*

Shows the characteristics of users who see Facebook as a source for information seeking.

PAPER | WebCrystal: Understanding and Reusing Examples in Web Authoring

Kerry Chang, Brad Myers, *Carnegie Mellon University, USA*

Describes an example-based web design tool that automatically generates hierarchical questions and explanations about existing website styling information. Can help designers understand how to recreate desired appearances from examples.

**PAPER | Understanding Mobile Q&A Usage:
An Exploratory Study**

Uichin Lee, Hyanghong Kang, Eunhee Yi, Mun Yi, Jussi Kantola,
*Korea Advanced Institute of Science and Technology,
Republic of Korea*

This work provides the first large-scale analysis of mobile Q&A usage which is very different from traditional Q&A system usage, and identifies the key factors of mobile Q&A usage.

**CASE STUDY | Using Physical-Social Interactions to
Support Information Re-finding**

Blake Sawyer, *Virginia Polytechnic Institute and State University,
USA*

Francis Quek, *Virginia Tech, USA*

Wai Choong Wong, Mehul Motani, *National University of
Singapore, Singapore*

Sharon Lynn Chu Yew Yee, Manuel Perez-Quinones,
Virginia Polytechnic Institute and State University, USA

This case study presents a system that tracks when information is used during physical-social interactions and automatically tags information with people and groups of people (i.e., social orbits).

■ SPECIAL INTEREST GROUP | 11A**DESIGNING WELLNESS INTERVENTIONS AND
APPLICATIONS****ORGANIZERS**

Young Lee, *Motorola Mobility, USA*

Petra Kempf, *Milestones, Germany*

This SIG is a forum to discuss an integrated approach to future wellness interventions and technologies with researchers and practitioners in academy and in business.

■ SPECIAL INTEREST GROUP | 11B**WORK LIFE BALANCE IN HCI****ORGANIZERS**

Anicia Peters, *Iowa State University, USA*

Susan Dray, *Dray & Associates, Inc., USA*

Jofish Kaye, *Nokia, USA*

This SIG explores possible solutions to the challenges that HCI researchers and practitioners face in their everyday lives in an attempt to maintain a work life balance.

■ SPECIAL INTEREST GROUP | 13A**ANIMAL-COMPUTER INTERACTION SIG****ORGANIZERS**

Clara Mancini, *The Open University, UK*

Shaun Lawson, *University of Lincoln, UK*

Janet van der Linden, *The Open University, UK*

Jonna Häkkinen, *Nokia Research Center, Finland*

Frank Noz, *FrankNoz.com, USA*

Chadwick Wingrave, *UCF, USA*

Oskar Juhlin, *Stockholm University, Sweden*

Beyond HCI: animals as technology users and co-participants in technological interactions, in the context of human-animal relationships and animal engagement with technology in different settings.

**SPECIAL EVENT
CELEBRATE 30 YEARS OF CHI!
4TH FLOOR FOYER
15:50-16:30**

We'll have music, cake, and surprises
as we celebrate CHI's 30th birthday!
Please join us for this special break.



■ CLOSING PLENARY | BALLROOM D
16:30-18:00
DESIGNING INTELLIGENT ORTHOTICS AND PROSTHETICS
Hugh Herr
Massachusetts Institute of Technology, USA

A long-standing goal in rehabilitation science is to apply neuromechanical principles of human movement to the development of highly functional prostheses and orthoses. When well-designed and properly customized for an individual, these devices not only traverse physical limitations but also become very much a part of the wearer's physical self. Critical to this effort is the understanding of how humans interact with their own limbs, and the development of actuator technologies and control methodologies that interact with the human in manner compatible with their natural interaction. In this lecture, I present several examples of prosthetic limbs and orthotic devices designed to support comfortable and efficient use, highly precise control, and ease of use. These examples are then used to motivate design strategies for prosthetic and orthotic devices.

About Hugh Herr

Hugh Herr is Associate Professor within MIT's Program of Media Arts and Sciences, and the Harvard-MIT Division of Health Sciences and Technology. His primary research objective is to apply principles of biomechanics and neural control to guide the designs of wearable robotic systems for human rehabilitation and physical augmentation. In the area of human augmentation, Professor Herr has employed cross bridge models of skeletal muscle to the design and optimization of a new class of human-powered mechanisms that amplify endurance for cyclic anaerobic activities. He has also built elastic shoes that increase metabolic economy for running, and leg exoskeletons for walking load-carrying augmentation. In the area of assistive technology, Professor Herr's group has developed powered orthotic and prosthetic mechanisms for use as assistive interventions in the treatment of leg disabilities caused by amputation, stroke, cerebral palsy, and multiple sclerosis. Professor Herr has authored or coauthored over 60 technical publications in biomechanics and wearable robotics. He was the recipient of the 2007 Heinz Award for Technology, Economy, and Employment.



■ CHI 2012 INTERACTIVITY | COMMONS (EXHIBIT HALL 4)

INTERACTIVITY - EXPLORATIONS AND RESEARCH

Interactivity is your chance to fully engage at a personal level by touching, squeezing, hearing or even smelling interactive visions for the future: they come as prototypes, demos, artworks, design experiences as well as inspirational technologies. Interactivity is also an alternative to the traditional textual format at CHI to disseminate advancements in the field. Interactivity promotes and provokes discussion about the role of technology by actively engaging attendees one-by-one.

There are two types of Interactivity exhibits at CHI this year:

Interactivity Explorations exhibits present cultural applications and explorations of future technologies. This is an opportunity to experience digital art and interactive experiences that ask questions, inspire reflection, and engage your intellect and imagination.

Interactivity Research exhibits present an exciting collection of hands-on research demonstrations and prototypes. This is an opportunity to experience new interaction techniques, systems, and early concepts.

Some of the interactivity exhibits (Limited Time Collection - identified on the Commons Map) are only available on Tuesday afternoon from 15:50 to 19:00, during the Interactivity Highlight, and again on Wednesday during the lunch break. These presenters will be stationed at their exhibits throughout these times.

The rest of the exhibits (Permanent Collection - identified on the Commons Map) are available from the Monday evening reception through the Thursday morning break. These presenters will be stationed at their exhibits at various times from Monday through Thursday (see the detail in the schedule below). The Permanent Collection will remain open throughout the conference, including when presenters are not present, as many of these exhibits can still be experienced by attendees without author support or guidance.

Monday

18:00-20:00 **Permanent Collection** open
Presenters present entire time

Tuesday

10:50 - 19:00 **Permanent Collection** open
Presenters present from 15:50-19:00

15:50 - 19:00 **Limited Time Collection** open
Presenters present 15:50 - 19:00 (entire time)

Wednesday

10:50 - 19:00 **Permanent Collection** open
Presenters present from 10:50 - 11:30, 12:50 - 14:30,
15:50 - 16:30 (during breaks)

12:50 - 14:30 **Limited Time Collection** open
All presenters present

Thursday

10:50 - 11:30 **Permanent Collection** open
Presenters present 10:50 - 11:30

Closed at 11:30

■ INTERACTIVITY - EXPLORATIONS

Murmur Study**i300**

Christopher Baker, *School of the Art Institute of Chicago, USA*

Murmur Study is an art installation that examines the rise of micro-messaging technologies such as Twitter and Facebook's status updates. One might describe these messages as a type of digital small talk. But unlike face to face conversations, these fleeting thoughts are accumulated, archived and digitally indexed by corporations, governments and research institutions. While the long-term impact of these archives remains to be seen, the sheer volume of publicly accessible, personal, and often emotional expressions should give us pause.

HWD Corporation - A Collection of 100 Re-wired Joysticks from the Last 30 Years of Gaming Culture **i301**

Roger Ibars, *Microsoft Research Asia, China*

HWD (Hard-wired devices) Corporation is a collection of 100 electronic devices, each consisting of a travel alarm clock connected to a different game controller selected from the last 30 years of gaming culture. For each device a new interaction has been crafted by hard-wiring the functions of the alarm clock onto the digital switches of the controller. As a result, the basic functionalities of the alarm clock – set up time, set up alarm, light on and off, alarm off - can be controlled with the joysticks. This project is a journey through the history of game controllers, to celebrate both its revolutionary successes and remarkable failures.

Artistic Robot Please Smile**i302**

Hye Yeon Nam, Changhyun Choi, *Georgia Tech, USA*

This installation explains how people interpret artistic robots as more than mere machines in the theory of intentionality and introduces the implementation of the artistic robot, Please Smile, which consists of a series of robotic skeleton arms that gesture in response to a viewer's facial expressions.

MelodicBrush: A Cross-Modal Link between Ancient and Digital Art Forms **i303**

Michael Xuelin Huang, Will W. W. Tang, Kenneth W.K. Lo,
C. K. Lau, Grace Ngai, Stephen Chan, *The Hong Kong Polytechnic University, Hong Kong*

MelodicBrush is a novel cross-modal musical system that connects two ancient art forms: Chinese ink-brush calligraphy and Chinese music. Our system endows the process of calligraphy writing with a novel auditory representation in a natural and intuitive manner to create a novel artistic experience. The writing effect is simulated as though the user were writing on an infinitely large piece of paper viewed through a viewport. The real-time musical generation effects are motivated by principles of metaphoric congruence and statistical music modeling

Sonik Spring

i316

J. Tomás Henriques, *Buffalo State College, USA*

The Sonik Spring is an interface for real-time control of sound that directly links gestural motion and kinesthetic feedback to the resulting musical experience. The interface consists of a 15-inch spring with unique flexibility, which allows multiple degrees of variation in its shape and length. These are at the core of its expressive capabilities and wide range of functionality as a sound processor.

RobotBuddha

i319

Woosuk Choi, Romy Achituv (advisor), *Hongik University, Republic of Korea*

Using a dedicated twitter account, participants are encouraged to send their prayers, blessings and wishes to the RobotBuddha shrine. Incoming messages are converted to Morse code and "chanted" by the robotic arms, i.e., played back on Korean Moktaks – traditional wooden percussion instruments ritualistically used by Buddhist clergy.

Lovely Rita

i320

Minhye Lee, Romy Achituv (advisor), *Hongik University, Republic of Korea*

"Lovely Rita" is a dress constructed solely out of variations on a single modular unit: a zipper and the embedded light array it controls. The zipper module is both the fundamental structural unit of the garment as well as a versatile interactive design element, which provides the wearer with the flexibility to dynamically shape the look and feel of the dress.

Light Arrays

i322

Danielle Wilde, *Australia*

Alvaro Cassinelli, Alexis Zerroug, *The University of Tokyo, Japan*

The Light Arrays project explores the extension of the body through an array of visible light beams projecting on the environment a dynamic representation of the body, its movement and posture. Interestingly, these light cues are visible both for the user wearing the device as well as for others. The result is an experiential bridge between what we see and what we feel or know about the dynamic, moving body. The Light Arrays afford augmented proprioception, generated through the artificial visual feedback system; enhanced body interaction prompted by the interactively augmented body image (in time and space); as well as a clear visual representation of interpersonal and inter-structural | architectural space.

Scorelight & scoreBots

i324

Alvaro Cassinelli, *The University of Tokyo, Japan*

Daito Manabe, *Rhizomatics, Japan*

Stephane Perrin, *Independent Artist, Japan*

Alexis Zerroug, Masatoshi Ishikawa, *The University of Tokyo, Japan*

"scoreLight" and "scoreBots" are two experimental platforms for performative sound design and manipulation. Both are essentially synesthetic interfaces – synesthetic musical instruments - capable of translating free-hand drawings into a sonic language of beats and pitches, all in real time. While scoreLight uses a modified "smart" laser scanner to track the figure's relevant features (in particular contours), scoreBots rely on one or more tiny line-follower robots to do the same.

hipDisk

i325

Danielle Wilde, *Australia*

hipDisk is a wearable interface that extends the hips and torso horizontally to give the moving body musical capabilities. The device prompts wearers to move in strange ways, bypassing norms of self-constraint, to actuate sound. The result is sonically and physically ungainly, yet strangely compelling, and often prompts spontaneous laughter. hipDisk emerged from an embodied, performative research approach. It began as a single user device, and evolved to support social interaction and co-creation, as well as creatively engaged, embodied discovery and learning. Using, and also observing hipDisk in use, affords insight into how ungainly, embodied, performative fun may be a powerful vehicle for embodied knowledge generation and learning.

Touchbox: Intriguing Touch between Strangers

i327

Mads Hoby, *Medea Collaborative Media Initiative, Sweden*

The Touchbox is about facilitating intriguing touch interaction between strangers. The participants each wear a pair of headphones, and when they touch each others bare skin, they both hear a complex sound pattern. Previous (successful) work involved a skilled Performer and one Participant; the Touchbox was designed to be played by pairs of pristine Participants exploring the interaction situation on their own. It turned out that their interaction experiences were quite engaging albeit more varied in mood and character. The Touchbox illustrates a novel approach to embodied interaction design where social norms are transcended by means of daring and captivating interactions.

Herzfassen. A Responsive Object. i328

Monika Hoinkis, *University of Applied Sciences Potsdam, Germany*

'Herzfassen' is a self-contained kinetic object that uses physical computing and biometric data to provide a highly aesthetic and sensual experience while still having the outer appearance of an ordinary everyday object. A metal bowl filled with water visualizes the human heartbeat through vibration and according patterns in the water surface. The title 'Herzfassen' derives from the German expression for 'to take heart' thus hints to the haptic and emotional experience with the object. This paper describes aim and design of the piece, comprising construction, technical function, as well as the interaction cycle respectively the object's dramaturgy. Further, it reports on the audience's joyful and emotional experiences with the object within past exhibitions as display and use hence human contact is the main purpose of 'Herzfassen'.

Embroidered Confessions: An Interactive Quilt of the Secrets of Strangers i329

Julynn Benedetti, *Parsons The New School for Design, USA*

The condition of anonymity creates a private space within a public space as a person feels the freedom to act without attribution. This phenomenon holds true in both physical and digital spaces. People feel free to post their most intimate secrets on the Internet with the belief that their confessions are ephemeral and intangible. In reality, this data is perpetually archived and cached on distant servers. A disconnect exists between the perception of the transitory quality of digital data and the truth of its enduring existence. Through the weaving of the stories and secrets of strangers from the Internet into a material artifact, Embroidered Confessions represents the physical manifestation of the duality of digital information.

The Envisioning Cards: A Toolkit for Catalyzing Humanistic and Technical Imaginations i419

Batya Friedman, David Hendry, *University of Washington, USA*

(See associated paper on page 55)

The Chocolate Machine i420

Flavius Kehr, *University of Koblenz-Landau, Germany*
Marc Hassenzahl, Matthias Laschke, Sarah Diefenbach, *Folkwang University of Arts, Germany*

(See associated paper on page 45)

Pygmy: A Ring-like Anthropomorphic Device That Animates The Human Hand i421

Masayasu Ogata, Yuta Sugiura, Hirotaka Osawa, Michita Imai, *Keio University, Japan*

Pygmy is an anthropomorphic device that magnifies hand expressions. It is based on the concept of hand anthropomorphism and it uses finger movements to create the anthropomorphic effect. Wearing the device is similar to having eyes and a mouth on the hand; the wearer's hand spontaneously expresses their emotions. Interactive manipulation by controllers and sensors make the hand look animated.

PINOKY: A Ring That Animates Your Plush Toys i422

Yuta Sugiura, Calista Lee, Masayasu Ogata, Anusha Withana, Yasutoshi Makino, *Keio University, Japan*
Daisuke Sakamoto, *JST ERATO Igarashi Design Interface Project, Japan*
Masahiko Inami, *Keio University, Japan*
Takeo Igarashi, *JST ERATO Igarashi Design Interface Project, Japan*

(See associated paper on page 41)

The Urban Musical Game: Using Sport Balls as Musical Interfaces i426

Nicolas Rasamimanana, *Phonotonic, Paris, France*
Frédéric Bevilacqua, Julien Bloit, Norbert Schnell, Emmanuel Fléty, Andrea Cera, *IRCAM, France*
Uros Petrevski, Jean-Louis Frechin, *NoDesign, France*

We present Urban Musical Game, an installation using augmented sports balls to manipulate and transform an interactive music environment. The interaction is based on playing techniques, a concept borrowed from traditional music instruments and applied here to non musical objects.

Sifteo Cubes i436

David Merrill, Emily Sun, Jeevan Kalanithi, *Sifteo, Inc., USA*

In this paper we describe Sifteo cubes™, a tangible and graphical user interface platform. We note several patterns of use observed in homes and schools and identify design recommendations for display utilization on distributed interfaces like Sifteo cubes. Additionally we discuss the process of commercializing the research prototype to create a marketable game system.

■ INTERACTIVITY - RESEARCH**Touché: Enhancing Touch Interaction on Humans, Screens, Liquids, and Everyday Objects i304**

Munehiko Sato, Ivan Poupyrev, Chris Harrison, *Disney Research, USA*

(See associated paper on page 36)

Communitysourcing: Engaging Local Crowds to Perform Expert Work Via Physical Kiosks i305

Kurtis Heimerl, Brian Gawalt, Kuang Chen, Tapan Parikh, Björn Hartmann, *University of California, Berkeley, USA*

(See associated paper on page 62)

A Virtual Reality Dialogue System For The Treatment Of Social Phobia i306

Willem-Paul Brinkman, Dwi Hartanto, Ni Kang, Daniel de Vliegher, *Delft University of Technology, Netherlands*
 Isabel L. Kampmann, Nexhmedin Morina, Paul G.M. Emmelkamp, *University of Amsterdam, Netherlands*
 Mark Neerinx, *TNO Human Factors, Netherlands*

People with social phobia have a severe fear of everyday social situations. In this paper we describe a virtual reality exposure therapy system specifically designed to expose patients with social phobia to various social situations. Patients can engage in a free speech dialogue with avatars while being monitored by a therapist. To control phobic stressors, therapists can control the avatar's gaze, the avatar's dialogue style and the narrative stories that are embedded throughout the exposure. The system uses the Delft remote virtual reality exposure therapy platform which allows remote treatment.

Cooking with "panavi": Challenging to Professional Culinary Arts i307

Daisuke Uriu, Mizuki Namai, Satoru Tokuhisa, Ryo Kashiwagi, Masahiko Inami, Naohito Okude, *Keio University, Japan*

(See associated paper on page 34)

Rewarding the Original: Explorations in Joint User-sensor Motion Spaces i308

John Williamson, Roderick Murray-Smith, *University of Glasgow, UK*

(See associated paper on page 67)

DiskPlay: In-Track Navigation on Turntables i309

Florian 'Floyd' Heller, Justus Lauten, Jan Borchers, *RWTH Aachen University, Germany*

(See associated paper on page 73)

An Approach and Evaluation of Interactive System Synchronizing Change of Taste and Visual Contents i310

Hiromi Nakamura, Homei Miyashita, *Meiji University, Japan*

(See associated paper, "Development and Evaluation of Interactive System for Synchronizing Electric Taste and Visual Content" on page 36)

Enabling Concurrent Dual Views on Common LCD Screens i311

Seokhwan Kim, Xiang Cao, Haimo Zhang, *Microsoft Research Asia, China*

Desney Tan, *Microsoft Research, UK*

(See associated paper on page 76)

Beyond Stereo: An Exploration of Unconventional Binocular Presentation for Novel Visual Experience i312

Haimo Zhang, Xiang Cao, *Microsoft Research Asia, China*
 Shengdong Zhao, *National University of Singapore, Singapore*

(See associated paper on page 90)

Combiform: Beyond Co-attentive Play, a Combinable Social Gaming Platform i313

Edmond Yee, Josh Joiner, Tai An, Andrew Dang, *University of Southern California, USA*

Combiform is a novel digital gaming console featuring four combinable handheld controllers. It is a new and unique tangible gaming interface that stresses the importance of co-located, co-attentive social interactions among players. In particular, multiple players may freely combine and lock together their handheld game controllers, thereby creating a very flexible collective and transformable tangible interface. Combiform emphasizes social interaction through controller-to-controller contact. The platform and its 10 games introduce novel, tangible and physical co-attentive experiences that are not found in traditional co-located gaming platforms using 'embodied' controllers (e.g. Nintendo Wii and Microsoft Kinect). Based on observations, this new interactive technique has successfully transformed typical co-located social play experiences into a multisensory physical activity.

Virtual Projection: Exploring Optical Projection as a Metaphor for Multi-Device Interaction i314

Dominikus Baur, *University of Munich LMU, Germany*
 Sebastian Boring, *University of Calgary, Canada*
 Steven Feiner, *Columbia University, USA*

(See associated paper on page 66)

BinCam – A Social Persuasive System to Improve Waste Behaviors i315

Anja Thieme, Rob Comber, Nick Taylor, Ashur Rafiev, Patrick Olivier, *Newcastle University, UK*

BinCam is a social persuasive system to motivate reflection and behavioral change in the food waste and recycling habits of young adults. The system replaces an existing kitchen refuse bin and automatically logs disposed of items through digital images captured by a smart phone installed on the underside of the bin lid. Captured images are uploaded to a BinCam application on Facebook where they can be explored. Engagement with BinCam is designed to fit into the existing structure of users' everyday life, with the intention that reflection on waste and recycling becomes a playful and shared group activity. Results of a user study reveal an increase in both users' awareness of, and reflection about, their waste management and their motivation to improve their waste-related skills. With BinCam, we explore informational and normative social influences as a source of change, which has to date been underexplored in persuasive HCI.

Surround Haptics: Tactile Feedback for Immersive Gaming Experiences **i317**

Ali Israr, Seung-Chan Kim, *Disney Research, USA*
Jan Stec, *Disney Research, USA*
Ivan Poupyrev, *Disney Research, USA*

In this paper we propose an architecture for rendering rich and high-resolution haptic feedback on the user's body while playing interactive games. The haptic architecture consists of three main elements, namely, haptic engine, haptic API/codec, and haptic display. The haptic engine extracts events from the game, assigns haptic feedback to these events, and sends coded packets to haptic API/codec. The haptic API/codec translates the coded packets and computes driving signals based on carefully evaluated algorithms derived from psychophysical modeling of tactile perception. The driving signals are then routed to the haptic display embedded with an array of vibratory transducers. A user feels high resolution and refined tactile sensations on the body through the display. We have integrated the Surround Haptics system with a driving simulation game to provide an enjoyable gaming experience.

MUSTARD: A Multi User See Through AR Display **i318**

Abhijit Karnik, Walterio Mayol-Cuevas, Sriram Subramanian,
University of Bristol, UK

(See associated paper on page 91)

BodiPod: Interacting with 3D Human Anatomy via a 360° Cylindrical Display **i321a**

John Bolton, Peng Wang, Kibum Kim, Roel Vertegaal, *Queen's University, Canada*

We present BodiPod, a 3D 360 degree stereoscopic human anatomy browser. Our cylindrical display allows users to view a human anatomy volume at full scale from any perspective. Shutter glasses are only required if users want to examine the data stereoscopically. Users can change views simply by walking around the display volume, and interact with the human anatomy model inside the display through gesture and speech interactions, which include scaling, rotation, peeling, slicing and labeling. Our demonstration shows that using a cylindrical display has the benefits of providing stereoscopic rendering of human anatomy models at life-size scale that can be examined from any angle, while allowing interactions from an appropriate viewing distance.

TeleHuman: Effects of 3D Perspective on Gaze and Pose Estimation with a Life-size Cylindrical Telepresence Pod **i321b**

John Bolton, Kibum Kim, *Queen's University, Canada*
Jeremy Cooperstock, *McGill University, Canada*
Audrey Girouard, *Carleton University, Canada*
Roel Vertegaal, *Queen's University, Canada*

(See associated paper on page 91)

Hanging off a Bar **i326**

Florian 'Floyd' Mueller, Cagdas 'Chad' Toprak, Eberhard Graether,
Wouter Walmink, *RMIT University, Australia*
Bert Bongers, *University Technology Sydney, Australia*
Elise van den Hoven, *Eindhoven University of Technology, Netherlands*

Exertion Games involve physical effort and as a result can facilitate physical health benefits. We present Hanging off a Bar, an action hero-inspired Exertion Game in which players hang off an exercise bar over a virtual river for as long as possible. Initial observations from three events with audiences ranging from the general public to expert game designers suggest that Hanging off a Bar can be engaging for players and facilitate intense exertion within seconds. Furthermore, we collected suggestions for what game elements players believe could entice them to increase their physical effort investment. These suggestions, combined with Hanging off a Bar as research vehicle due to the easy measurement of exertion through hanging time, enable future explorations into the relationship between digital game elements and physical exertion, guiding designers on how to support exertion in digital games.

Vignette: Interactive Texture Design and Manipulation with Freeform Gestures for Pen-and-Ink Illustration **i330**

Rubaiat Habib Kazi, *National University of Singapore, Singapore*
Takeo Igarashi, *JST ERATO Igarashi Design Interface Project, Japan*
Shengdong Zhao, *National University of Singapore, Singapore*
Richard Davis, *Singapore Management University, Singapore*

Vignette is an interactive system that facilitates texture creation in pen-and-ink illustrations. Unlike existing systems, Vignette preserves illustrators' workflow and style: users draw a fraction of a texture and use gestures to automatically fill regions with the texture. We currently support both 1D and 2D synthesis with stitching. Our system also has interactive refinement and editing capabilities to provide a higher level texture control, which helps artists achieve their desired vision. A user study with professional artists shows that Vignette makes the process of illustration more enjoyable and that first time users can create rich textures from scratch within minutes.

360° Panoramic Overviews for Location-Based Services **i405**

Alessandro Mulloni, Hartmut Seichter, *Graz University of Technology, Austria*
Andreas Dünser, *HIT Lab NZ, New Zealand*
Patrick Baudisch, *Hasso Plattner Institute, Germany*
Dieter Schmalstieg, *Graz University of Technology, Austria*

(See associated paper on page 91)

ShoeSense: A New Perspective on Hand Gestures and Wearable Applications i406

Gilles Bailly, Jörg Müller, *Technische Universität, Germany*
Michael Rohs, *University of Munich, Germany*
Daniel Wigdor, *University of Toronto, Canada*
Sven Kratz, *University of Munich, Germany*
Dennis Guse, *Technische Universität, Germany*

When the user is engaged with a real-world task it can be inappropriate or difficult to use a smartphone. To address this concern, we developed ShoeSense, a wearable system consisting in part of a shoe-mounted depth sensor pointing upward at the wearer. ShoeSense recognizes relaxed and discreet as well as large and demonstrative hand gestures. In particular, we designed three gesture sets (Triangle, Radial, and Finger-Count) for this setup, which can be performed without visual attention. The advantages of ShoeSense are illustrated in five scenarios: (1) quickly performing frequent operations without reaching for the phone, (2) discreetly performing operations without disturbing others, (3) enhancing operations on mobile devices, (4) supporting accessibility, and (5) artistic performances. We present a proof-of-concept, wearable implementation based on a depth camera and report on a lab study comparing social acceptability, physical and mental demand, and user preference. A second study demonstrates a 94-99% recognition rate of our recognizers.

Mobile ActDresses: Programming Mobile Devices by Accessorizing i407

Mattias Jacobsson, Ylva Fernaeus, Stina Nylander, *Swedish Institute of Computer Science, Sweden*

Mobile ActDresses is a design concept where existing practices of accessorizing, customization and manipulation of a physical mobile device is coupled with the behaviour of its software. With this interactivity demonstrator we will provide a hands on experience of doing this kind of playful manipulation. We provide two examples for how to implement Mobile ActDresses using quick'n dirty hacks to create custom shells and jewellery for controlling the behaviour of the phone.

AMARA: The Affective Museum of Art Resource Agent i408

S. Joon Park, *Drexel University, USA*
Gunho Chae, *Korea Advanced Institute of Science and Technology, Republic of Korea*
Craig MacDonald, *Drexel University, USA*
Robert Stein, *The Indianapolis Museum of Art, USA*
Susan Wiedenbeck, *Drexel University, USA*
Jungwha Kim, *Korea Advanced Institute of Science and Technology, Republic of Korea*

This interactive system uses an embedded agent for question-based art collection search on the platform of the Indianapolis Museum of Art website. Unlike a keyword search box, AMARA helps users browse and search for artwork by asking them simple questions with answers mapped to social tags. Thus, the users do not need to be subject matter experts to input specific terms to search. In designing AMARA, we focused on creating an enjoyable browsing experience and helping users to determine their known and unknown art preferences.

Design of an Exergaming Station for Children with Cerebral Palsy i409

Hamilton Hernandez, Nicholas Graham, Darcy Fehlings, Lauren Switzer, Zi Ye, Quentin Bellay, Md Ameer Hamza, Cheryl Savery, Tadeusz Stach, *Queen's University, Canada*

(See associated paper on page 92)

Scoop! A Movement-based Math Game Designed to Reduce Math Anxiety i410

Katherine Isbister, *NYU-Poly*
Mike Karlesky, *Polytechnic Institute of NYU, USA*
Jonathan Frye, *New York University, USA*
Rahul Rao, *Polytechnic Institute of NYU, USA*

In this paper, we describe Scoop!, a movement-based game designed to reduce math anxiety. The game makes use of research on the effects of 'power poses' to explore whether movement mechanics can shift feelings about math for players. The Interactivity demonstration includes both a 'high power', Kinect-driven version of the game, and a 'low power', track-pad-driven version of the game. CHI attendees can try out both versions to physically experience the effects.

EyeRing: An Eye on a Finger i411

Suranga Nanayakkara, *Singapore University of Technology and Design, Singapore*
Roy Shilkrot, Pattie Maes, *Massachusetts Institute of Technology, USA*

Finger-worn devices are a greatly underutilized form of interaction with the surrounding world. By putting a camera on a finger we show that many visual analysis applications, for visually impaired people as well as the sighted, prove seamless and easy. We present EyeRing, a ring mounted camera, to enable applications such as identifying currency and navigating, as well as helping sighted people to tour an unknown city or intuitively translate signage. The ring apparatus is autonomous, however our system also includes a mobile phone or computation device to which it connects wirelessly, and an earpiece for information retrieval. Finally, we will discuss how different finger worn sensors may be extended and applied to other domains.

IllumiShare: Sharing Any Surface i412

Sasa Junuzovic, Kori Inkpen, Tom Blank, Anoop Gupta, *Microsoft Research, UK*

(See associated paper on page 71)

Sketch It, Make It: Sketching Precise Drawings for Laser Cutting i413

Gabe Johnson, Mark Gross, *Carnegie Mellon University, USA*
Ellen Yi-Luen Do, *Georgia Tech, USA*
Jason Hong, *Carnegie Mellon University, USA*

Sketch It, Make It (SIMI) is a modeling tool that enables non-experts to design items for fabrication with laser cutters. SIMI recognizes rough, freehand input as a user iteratively edits a structured vector drawing. The tool combines the strengths of sketch-based interaction with the power of constraint-based modeling. Several interaction techniques are combined to present a coherent system that makes it easier to make precise designs for laser cutters.

A Visual Display of Sociotechnical Data i414

Yanni Loukissas, David Mindell, *Massachusetts Institute of Technology, USA*

Can visualization bring entangled social and technical relationships into sharper view for the broad range of professionals who study, design, or operate within complex human-machine systems? This interactive project demonstrates how visual tools can illuminate the changing meaning and importance of human presence in remote or autonomous operations. Using historical data sets from the 1969 Apollo 11 moon landing, the project presents opportunities and challenges in the visual display of sociotechnical data: integrating qualitative and quantitative sources, flattening data into graphics without losing interpretive depth, using a visual composition to tell non-linear stories. It introduces a timely and long-term endeavor, the development of a visual language and interface connecting researchers, designers, and operators in the study of human-machine teams.

TAP & PLAY: An End-User Toolkit for Authoring Interactive Pen and Paper Language Activities i415

Anne Marie Piper, Nadir Weibel, James Hollan, *University of California, San Diego, USA*

(See associated paper on page 32)

Stackables: Faceted Browsing with Stacked Tangibles i416

Petra Isenberg, *INRIA, France*
Stefanie Klum, Ricardo Langner, *University of Magdeburg, Germany*
Jean-Daniel Fekete, *INRIA, France*
Raimund Dachsel, *University of Magdeburg, Germany*

We demonstrate Stackables, tangible widgets designed for individual and collaborative faceted browsing. In contrast, current interfaces for browsing and search in large data spaces largely focus on supporting either individual or collaborative activities. Each stackable facet token represents search parameters that can be shared amongst collaborators, modified, and stored. We show how individuals or multiple people can interact with Stackables and combine them to formulate queries on realistic datasets. We have successfully used and evaluated Stackables in a user study with a dataset of over 1500 books and 12 facets with ranges of thousands of facet values.

Interactive Block Device System with Pattern Drawing Capability on Matrix LEDs i417

Junichi Akita, *Kanazawa University, Japan*

This paper describes an interactive block device with dot-matrix LED, with capabilities of drawing patterns by lights, physical and signal connections of devices with magnet connectors, and interaction using accelerometer and sounder. The pattern drawing is implemented by the technique of using matrix LEDs as light sensor array, which saves the additional hardware cost. Three applications of this block device, pattern morphing, function definable block, and musical box, are also described.

The Bohemian Bookshelf: Supporting Serendipitous Book Discoveries through Information Visualization i418

Alice Thudt, *University of Munich, Germany*
Uta Hinrichs, Sheelagh Carpendale, *University of Calgary, Canada*

(See associated paper on page 60)

Miniature Alive: Augmented Reality-based Interactive DigiLog Experience in Miniature Exhibition i423

Taejin Ha, *Korea Advanced Institute of Science and Technology, Republic of Korea*

Kiyoung Kim, *GIST CTI, Republic of Korea*

Nohyoung Park, *Korea Advanced Institute of Science and Technology, Republic of Korea*

Sangchul Seo, *GIST CTI, Republic of Korea*

Wootack Woo, *Korea Advanced Institute of Science and Technology, Republic of Korea*

In this paper, we present Miniature Alive, a next-generation interactive miniature exhibition that provides a DigiLog experience that combines aesthetic/spatial feelings with an analog miniature and dynamic interaction with digitalized 3D content by exploiting augmented reality (AR) technology. Using our Miniature Alive, exhibition visitors can enjoy virtual storytelling in the physical miniature by turning a page of an e-book, interacting with augmented 3D objects through their mobile phones, and even change the original story. Our work is useful in guiding the design and implementation of new miniature exhibitions.

Using Augmented Snapshots for Viewpoint Switching and Manipulation in Augmented Reality i424

Mengu Sukan, Steven Feiner, *Columbia University, USA*

SnapAR is a magic-lens-based hand-held augmented reality application that allows its user to store snapshots of a scene and revisit them virtually at a later time. By storing a still image of the unaugmented background along with the 6DOF camera pose, this approach allows augmentations to remain dynamic and interactive. This makes it possible for the user to quickly switch between vantage points at different locations from which to view and manipulate virtual objects, without the overhead of physically traveling between those locations.

AHNE: A Novel Interface for Spatial Interaction i425

Matti Niinimäki, Koray Tahiroglu, *Aalto University, Finland*

In this paper we describe AHNE (Audio-Haptic Navigation Environment). It is a three-dimensional user interface (3D UI) for manipulating virtual sound objects with natural gestures in a real environment. AHNE uses real-time motion tracking and custom-made glove controllers as input devices, and auditory and haptic feedback as the output. We present the underlying system and a possible use for the interface as a musical controller.

GraphTrail: Analyzing Large Multivariate, Heterogeneous Networks while Supporting Exploration History i427

Cody Dunne, Nathalie Henry Riche, Bongshin Lee, *Microsoft Research, UK*

Ronald Metoyer, *Oregon State University, USA*
George Robertson, *Microsoft Research, UK*

(See associated paper on page 68)

QuickDraw: Improving Drawing Experience for Geometric Diagrams i428

Salman Cheema, *University of Central Florida, USA*
Sumit Gulwani, *Microsoft Research, USA*
Joseph LaViola, *University of Central Florida, USA*

(See associated paper on page 49)

A Handle Bar Metaphor for Virtual Object Manipulation with Mid-Air Interaction i429

Peng Song, Wooi Boon Goh, William Hutama, Chi-Wing Fu, Xiaopei Liu, *Nanyang Technological University, Singapore*

(See associated paper on page 56)

DisplayStacks: Interaction Techniques for Stacks of Flexible Thin-Film Displays i430

Aneesh Tarun, *Queen's University, Canada*
Audrey Girouard, *Carleton University, Canada*
Roel Vertegaal, *Queen's University, Canada*

(See associated paper on page 81)

Interactive Paper Substrates to Support Musical Creation i431

Jérémie Garcia, Theophanis Tsandilas, *INRIA, France*
Carlos Agon, *IRCAM, France*
Wendy Mackay, *INRIA, France*

(See associated paper on page 73)

Discovery-based Games for Learning Software i432

Tao Dong, *University of Michigan, USA*
Mira Dontcheva, Diana Joseph, *Adobe Systems, USA*
Karrie Karahalios, *University of Illinois, USA*
Mark Newman, Mark Ackerman, *University of Michigan, USA*

(See associated paper on page 79)

ZeroTouch: An Optical Multi-Touch and Free-Air Interaction Architecture i433

Jonathan Moeller, Andruid Kerne, William Hamilton, Andrew Webb, Nicholas Lupfer, *Texas A&M University, USA*

(See associated paper on page 76)

FlexCam – Using Thin-film Flexible OLED Color Prints as a Camera Array i434

Connor Dickie, Nicholas Fellion, Roel Vertegaal, *Queen's University, Canada*

FlexCam is a novel compound camera platform that explores interactions with color photographic prints using thinfilm flexible color displays. FlexCam augments a thinfilm color Flexible Organic Light Emitting Diode (FOLED) photographic viewfinder display with an array of lenses at the back. Our prototype allows for the photograph to act as a camera, exploiting flexibility of the viewfinder as a means to dynamically re-configure images captured by the photograph. FlexCam's flexible camera array has altered optical characteristics when flexed, allowing users to dynamically expand and contract the camera's field of view (FOV). Integrated bend sensors measure the amount of flexion in the display. The degree of flexion is used as input to software, which dynamically stitches images from the camera array and adjusts viewfinder size to reflect the virtual camera's FOV. Our prototype envisions the use of photographs as cameras in one aggregate flexible, thin-film device.

Toolset to explore visual motion designs in a video game i435

David Milam, *School of Interactive Arts and Technology, Canada*
Magy Seif El-Nasr, *Northeastern University, USA*
Lyn Bartram, Matt Lockyer, Chao Feng, Perry Tan, *School of Interactive Arts and Technology, Canada*

We describe a research toolset to explore visual designs in a video game. We focus specifically on visual motion, defined by attributes of motion, and their effect on accessibility, which may lead to a diminished experience for novice players. Eight expert game designers evaluated the tool embedded into a simple point and click game. Specifically they controlled attributes of speed, size of game elements, and amount of elements on screen associated to game targets, distractions, and feedback. The tool allowed experts to define difficulty settings and expose patterns, which they verified. As a game, we then investigated the effect of visual motion on accessibility in a formal user study comprised of 105 participants. As a follow-up to this work, we expanded the toolset to include 8 additional attributes of motion.

iRotate: Automatic Screen Rotation based on Face Orientation i437

Lung-Pan Cheng, Fang-I Hsiao, Yen-Ting Liu, Mike Y. Chen, *National Taiwan University, Taiwan*

(See associated paper on page 76)

TEROOS: A Wearable Avatar to Enhance Joint Activities i438

Tadakazu Kashiwabara, Hirotaka Osawa, *Keio University, Japan*
Kazuhiko Shinozawa, *ATR Intelligent Robotics and Communication Laboratories, Japan*
Michita Imai, *Keio University, Japan*

This exhibit demonstrates a wearable avatar named TEROOS, which is mounted on a person's shoulder. TEROOS allows the users who wear it and control it to share a vision remotely. Moreover, the avatar has an anthropomorphic face that enables the user who controls it to communicate with people co-located with the user who wears it. We have a field test by using TEROOS and observed that the wearable avatar innovatively assisted the users to communicate during their joint activities such as route navigating and buying goods at a shop. The user controlling TEROOS could give the user wearing it appropriate route instructions on the basis of the situation around TEROOS. In addition, both users could easily identify objects that they discussed. Moreover, shop staff members communicated with the user controlling TEROOS and behaved as they normally would when the user asked questions about the goods.

Animating Paper Craft using Shape Memory Alloys i439

Jie Qi, Leah Buechley, *Massachusetts Institute of Technology, USA*

(See associated paper on page 41)

Augmenting the Scope of Interactions with Implicit and Explicit Graphical Structures i440

Raphaël Hoarau, Stéphane Conversy, *Université de Toulouse - ENAC/IRIT, France*

(See associated paper on page 72)

Joggobot: A Flying Robot as Jogging Companion i500

Eberhard Graether, Florian 'Floyd' Mueller, *RMIT University, Australia*

Exertion activities, such as jogging, provide many health benefits, but exercising on your own can be considered disengaging. We present our system 'Joggobot', a flying robot accompanying joggers. Our design process revealed preliminary insights into how to design robots for exertion and how to address emerging design challenges. We summarize these insights into the four themes: 'embodiment', 'control', 'personality' and 'communication', which mark initial starting points towards understanding how to design robots for exertion activities. We hope our work guides and inspires designers when facilitating the benefits of exertion through robots.

■ STUDENT GAMES COMPETITION | BALLROOM D

The Games and Entertainment Special Community created this competition to showcase student work in areas of game design and development that connect strongly to the CHI community of research and practice. Students submitted games as well as extended abstracts clarifying innovative aspects of their work. The jury selected three finalist games in each category—Serious Games, and Innovative Interface—and the winner in each category will be announced at the awards session on Tuesday afternoon. CHI attendees can play the games at the Interactivity session in the Commons (Exhibit Hall 4, Level 1) directly after the awards session. Winners will also be announced at the closing Plenary on Thursday.

Tuesday

14:30 - 15:50 **Competition and Awards Session**

The games are open to play in the Commons (Exhibit Hall 4, Level 1) immediately the after session.

■ STUDENT GAMES COMPETITION - SERIOUS GAMES

Hit It! - An Apparatus for Upscaling Mobile HCI Studies i401

Niels Henze, *University of Oldenburg, Germany*

Power Defense: A Serious Game for Improving Diabetes Numeracy i402

Bill Kapralos, Aaron DeChamplain, Ian McCabe, Matt Stephan, *University of Ontario Institute of Technology, Canada*

Motion Chain: A Webcam Game for Crowdsourcing Gesture Collection i403

Ian Spiro, *New York University, USA*

■ STUDENT GAMES COMPETITION - INNOVATIVE INTERFACES

Herding Nerds on your Table: NerdHerder, a Mobile Augmented Reality Game i400

Yan Xu, Sam Mendenhall, Vu Ha, *Georgia Tech, USA*
Paul Tillery, *Savannah College of Art and Design, USA*
Joshua Cohen, *Berklee College of Music, USA*

BombPlus - Use NFC and Orientation Sensor to Enhance User Experience i404

Chao-Ju Huang, Chien-Pang Lin, Min-Lun Tsai, Fu-Chieh Hsu, *National Taiwan University, Taiwan*

Combiform: Beyond Co-attentive Play, a Combinable Social Gaming Platform i313

Edmond Yee, Josh Joiner, Tai An, Andrew Dang, *University of Southern California, USA*

■ VIDEOS | BALLROOM D

The videos track is a forum for human-computer interaction that leaps off the page: vision videos, reflective pieces, humor, novel interfaces, studies and other moving images relevant to HCI.

This year's selections will premiere on Tuesday morning with an encore performance later in the evening. The evening performance culminates in the Golden Mouse award ceremony. Popcorn and drinks are available at the evening performance only.

Tuesday

11:30 - 12:50 Video Premiere

19:00 - 20:30 Encore Viewing (popcorn and drinks)

An Augmented Multi-touch System Using Hand and Finger Identification

Peter Kung, *Cornell University, USA*

Dominik Kaeser, *Pixar Animation Studios, USA*

Craig Schroeder, *University of California, Los Angeles, USA*

Tony DeRose, *Pixar Animation Studios, USA*

Donald Greenberg, *Cornell University, USA*

Kenrick Kin, *Pixar Animation Studios, USA*

With the advent of devices such as smart phones and tablet computers, multi-touch applications are rapidly becoming commonplace. However, existing multi-touch sensors are not able to report which finger, or which hand, is responsible for each of the touches. To overcome this deficiency we introduce a multi-touch system that is capable of identifying the finger and hand corresponding to each touch. The system consists of a commercially available capacitive multi-touch display augmented with an infrared depth camera mounted above the surface of the display. We performed a user study to measure the accuracy of the system and found that our algorithm was correct on 92.7% of the trials.

Anyone Can Sketch Vignettes!

Rubaiat Habib Kazi, *National University of Singapore, Singapore*

Takeo Igarashi, *JST ERATO Igarashi Design Interface Project*

Shengdong Zhao, *National University of Singapore, Singapore*

Richard Davis, *Singapore Management University, Singapore*

Toni-Jan Keith Monserrat, *National University of Singapore, Singapore*

Vignette is an interactive system that facilitates texture creation in pen-and-ink illustrations. Unlike existing systems, Vignette preserves illustrators' workflow and style: users draw a fraction of a texture and use gestures to automatically fill regions with the texture. Our exploration of natural work-flow and gesture-based interaction was inspired by traditional way of creating illustrations. We currently support both 1D and 2D synthesis with stitching. Our system also has interactive refinement and editing capabilities to provide a higher level texture control, which helps artists achieve their desired vision. Vignette makes the process of illustration more enjoyable and that first time users can create rich textures from scratch within minutes.

Communication Technologies for the Zombie Apocalypse: New Educational Initiatives

Jennifer Golbeck, *University of Maryland, College Park, USA*

The threat of the zombie apocalypse has finally begun to reach a level of popular concern, both in the media and in government organizations like the U.S. Centers for Disease Control and Prevention. The zombie apocalypse and subsequent destruction of modern communication technologies will present a unique challenge to future generations. This video describes new STEM initiatives that will enable today's children to maintain vital information links once the undead hordes are upon us.

Designing Visualizations to Facilitate Multisyllabic Speech with Children with Autism and Speech Delays

Joshua Hailpern, Andrew Harris, Reed LaBotz, Brianna Birman,

University of Illinois at Urbana-Champaign, USA

Karrie Karahalios, *University of Illinois, USA*

Laura DeThorne, Jim Halle, *University of Illinois at Urbana-Champaign, USA*

The ability of children to combine syllables represents an important developmental milestone. This ability is often delayed or impaired in a variety of clinical groups including children with autism spectrum disorders (ASD) and speech delays (SPD). This video illustrates some of the features of VocSyl, a real-time voice visualization system to shape multisyllabic speech. VocSyl was designed using the Task Centered User Interface Design methodology from the beginning to the end of the design process. Children with Autism and Speech Delays, targeted users of the software, were directly involved in the development process, thus allowing us to focus on what these children demonstrate they require.

Experience "panavi," Challenge to Master Professional Culinary Arts!

Daisuke Uriu, Mizuki Namai, Satoru Tokuhisa, Ryo Kashiwagi,

Masahiko Inami, Naohito Okude, *Keio University, Japan*

This video introduces the user experience of "panavi" that supports cooking for domestic users to master professional culinary arts in their kitchens by managing temperature and pan movement properly. Utilizing a sensors-embedded frying pan wirelessly connected computer system, it analyzes sensors' data, recognizes users' conditions, and provides the users situated navigation messages. In the video, a young lady tries to cook spaghetti Carbonara using panavi, and masters this "difficult" menu by enjoying cooking process. The full paper of this work is also published in CHI '12 conference proceedings.

EyeRing: An Eye on a Finger

Suranga Nanayakkara, *Singapore University of Technology and Design, Singapore*
Roy Shilkrot, Pattie Maes, *Massachusetts Institute of Technology, USA*

Finger-worn devices are a greatly underutilized form of interaction with the surrounding world. By putting a camera on a finger we show that many visual analysis applications, for visually impaired people as well as the sighted, prove seamless and easy. We present EyeRing, a ring mounted camera, to enable applications such as identifying currency and navigating, as well as helping sighted people to tour an unknown city or intuitively translate signage. The ring apparatus is autonomous, however our system also includes a mobile phone or computation device to which it connects wirelessly, and an earpiece for information retrieval. Finally, we will discuss how different finger worn sensors may be extended and applied to other domains.

Fast and Frugal Shopping Challenge

Khaled Bachour, *The Open University, UK*
Jon Bird, *UCL, UK*
Vaiva Kalnikaite, *Interactables, UK*
Yvonne Rogers, *University College London, UK*
Nicolas Villar, *Microsoft Research, UK*
Stefan Kreitmayer, *The Open University, UK*

There are a number of mobile shopping aids and recommender systems available, but none can be easily used for a weekly shop at a local supermarket. We present a minimal, mobile and fully functional lambent display that clips onto any shopping trolley handle, intended to nudge people when choosing what to buy. It provides salient information about the food miles for various scanned food items represented by varying lengths of lit LEDs on the handle and a changing emoticon comparing the average miles of all the products in the trolley against a social norm. A fast and frugal shopping challenge is presented, in the style of a humorous reality TV show, where the pros and cons of using various devices to help make purchase decisions are demonstrated by shoppers in a grocery store.

Ferro Tale: Electromagnetic Animation Interface

Nan Zhao, Xiang Cao, *Microsoft Research Asia, China*
Jaturont Jamigranon, *Massachusetts College of Art and Design, USA*

In this video we demonstrate the idea and the prototype of an electromagnetic animation interface, ferro tale. Ferromagnetic particles, such as iron filings, have very fascinating characteristics. Therefore they are widely used in art, education and as toys. Besides their potential to enable visual and tactile feedback and to be used as a medium for high resolution tangible input, people's natural desire to engage and explore the behavior of this material makes them interesting for HCI. Inspired by the expressiveness of sand drawing, we want to explore ways to use an electromagnetic array, camera feedback, computer vision, and ferromagnetic particles to produce animations. The currently used magnetic actuation device consists of a 3 by 3 coil array. Even with such a small number of actuators, we are able to demonstrate several animation examples.

Haptic Lotus - A Theatre Experience for Blind and Sighted Audiences

Janet van der Linden, *The Open University, UK*
Terry Braun, *Braunarts, UK*
Yvonne Rogers, *University College London, UK*
Maria Oshodi, *Extant, UK*
Adam Spiers, *Bristol Robotics Laboratory, UK*
David McGoran, *University of the West of England, UK*
Rafael Cronin, *Indiana University, USA*
Paul O'Dowd, *Bristol Robotics Laboratory, UK*

How can new technologies be designed to facilitate comparable cultural experiences that are accessible by both blind and sighted audiences? An immersive theatre experience was designed to raise awareness and question perceptions of 'blindness', through enabling both sighted and blind members to experience a similar reality. We designed the Haptic Lotus, a novel device that changes its form in response to the audience's journey through the dark. The device was deliberately designed to be suggestive rather than directive to encourage enactive exploration for both sighted and blind people. During a week of public performances in Battersea Arts Centre in London 150 sighted and blind people took part. People were seen actively probing the dark space around them and for many the Haptic Lotus provided a strong sense of reassurance in the dark. During a week of public performances in Battersea Arts Centre in London 150 sighted and blind people took part. People were seen actively probing the dark space around them and for many the Haptic Lotus provided a strong sense of reassurance in the dark.

Looking Glass: A Field Study on Noticing Interactivity of a Shop Window

Jörg Müller, Robert Walter, Gilles Bailly, Michael Nischt, *Technische Universität, Germany*
Florian Alt, *University of Stuttgart, Germany*

In this paper we present our findings from a lab and a field study investigating how passers-by notice the interactivity of public displays. We designed an interactive installation that uses visual feedback to the incidental movements of passers-by to communicate its interactivity. In the field study, three displays were installed during three weeks in shop windows, and data about 502 interaction sessions were collected. Our observations show: (1) Significantly more passers-by interact when immediately showing the mirrored user image (+90%) or silhouette (+47%) compared to a traditional attract sequence with call-to-action. (2) Passers-by often notice interactivity late and have to walk back to interact (the landing effect). (3) If somebody is already interacting, others begin interaction behind the ones already interacting, forming multiple rows (the honeypot effect).

MAWL: Mobile Assisted Word-Learning

Pramod Verma, *Johns Hopkins University, USA*

Word-learning is one of the basic steps in language learning. A general traditional approach for learning new words is to keep a dictionary and use it whenever one encounters a new word. This video demonstrates Mobile Assisted Word-Learning (MAWL)[1]: an augmented reality based collaborative social-networking interface for learning new words using a smartphone. MAWL keeps track and saves all textual contexts during reading process along with providing augmented reality-based assistance such as images, translation into native language, synonyms, antonyms, sentence usage etc.

Pen-in-Hand Command: NUI for Real-Time Strategy eSports

William Hamilton, Andruid Kerne, *Texas A&M University, USA*
Jonathan Moeller, *Interface Ecology Lab*

Electronic Sports (eSports) is the professional play and spectating of digital games. Real-time strategy games are a form of eSport that require particularly high-performance and precise interaction. Prior eSports HCI has been keyboard and mouse based. We investigate the real-time strategy eSports context to design novel interactions with embodied modalities, because of its rigorous needs and requirements, and the centrality of the human-computer interface as the medium of game mechanics. To sense pen + multi-touch interaction, we augment a Wacom Cintiq with a ZeroTouch multi-finger sensor. We used this modality to design new pen + touch interaction for play in real-time strategy eSports.

Pet Video Chat: Monitoring and Interacting with Dogs over Distance

Jennifer Golbeck, *University of Maryland, College Park, USA*
Carman Neustaedter, *Simon Fraser University, Canada*

Companies are now making video-communication systems that allow pet owners to see, and, in some cases, even interact with their pets when they are separated by distance. Such 'doggie cams' show promise, yet it is not clear how pet video chat systems should be designed (if at all) in order to meet the real needs of pet owners. To investigate the potential of interactive dog cams, we then designed our own pet video chat system that augments a Skype audio-video connection with remote interaction features and evaluated it with pet owners to understand its usage. Our results show promise for pet video chat systems that allow owners to see and interact with their pets while away.

PINOKY: A Ring-like Device that Gives Movement to Any Plush Toy

Yuta Sugiura, Calista Lee, Masayasu Ogata, Anusha Withana,
Yasutoshi Makino, *Keio University, Japan*
Daisuke Sakamoto, *JST ERATO Igarashi Design Interface Project, Japan*
Masahiko Inami, *Keio University, Japan*
Takeo Igarashi, *JST ERATO Igarashi Design Interface Project, Japan*

Everyone has owned or have been in contact with plush toys in their life, and plush toys play an integral part in many areas, for example in a child's growing up process, in the medical field, and as a form of communication media. In order to enhance the interaction experience with plush toys, we created the PINOKY. PINOKY is a wireless, ring-like device that can be externally attached to any plush toy as an accessory that animates the toy by moving its limbs. It is a non-intrusive device, and users can instantly convert their personal plush toys into soft robots. Currently, there are several interactions, such as letting the user control the toy remotely, or inputting the desired movement by moving the toy, and having the data recorded and played back.

Plushbot: an Introduction to Computer Science

Yingdan Huang, Michael Eisenberg, *University of Colorado Boulder, USA*

We present the Plushbot project that focuses on providing a more motivating introduction of computer science to middle school students, employing tangible programming of plush toys as its central activity. About sixty students, ages 12-14, participated in a 7.5-week study in which they created and programmed their own plush toys. In order to achieve these, they learned and used several tools, including LilyPad Arduino, Modkit and a web-based application called Plushbot, which permits the user to integrate circuitry design with a pattern of plush toy pieces. Once a design is complete, the user can print the pattern and use it as a template for creating a plush toy. Plushbot is a system that allows children to create their own interactive plush toys with computational elements and ideas embedded.

SIGCHI SPrAyCE: A Space Spray Input for Fast Shape Drawing

Raphael Kim, Pattie Maes, *Massachusetts Institute of Technology, USA*

Current technological solutions that enable sharing some shape-based ideas are often time demanding and painful to use. The goal of this project is to create a new device, a new way of drawing in an intuitive way. A spray-based input is created to allow natural gestures to draw 3D objects and manipulate the drawing.

Supporting Children with Autism to Participate throughout a Design Process

Beate Grawemeyer, Emma Ashwin, Laura Benton, Mark Brosnan, Hilary Johnson, *University of Bath, UK*

A deficit in social communication is one of a number of core features of autism that can result in the exclusion of individuals with autism from the design process. Individuals with autism can be highly motivated by new technology, and the design of technologies for individuals with autism could potentially benefit from their direct input. We structured participatory design sessions using Cooperative Inquiry specifically to support the needs of individuals with autism. This video highlights how, when appropriately supported, the challenges of the social communication deficits associated with autism can be overcome and individuals with autism can take a full and active role within the design process.

TEROOS: A Wearable Avatar to Enhance Joint Activities

Tadakazu Kashiwabara, Hirotaka Osawa, *Keio University, Japan*
Kazuhiko Shinozawa, *ATR Intelligent Robotics and Communication Laboratories, Japan*
Michita Imai, *Keio University, Japan*

This video shows a wearable avatar named TEROOS, which is mounted on the shoulder of a person. TEROOS allows the users who wear it and control it to remotely share a vision. Moreover, the avatar has an anthropomorphic face that enables the user who controls it to communicate with people that are physically around the user who wears it. We have conducted a field test by using TEROOS and observed that the wearable avatar innovatively assisted the users to communicate during their joint activities such as route navigating, and buying goods at a shop. In addition, both users could easily identify objects that they discussed. Moreover, shop's staff members communicated with the user controlling TEROOS and they exhibited a typical social behavior.

The Design Evolution of LuminAR: A Compact and Kinetic Projected Augmented Reality Interface

Natan Linder, Pattie Maes, *Massachusetts Institute of Technology, USA*

LuminAR is a new form factor for a compact and kinetic projected augmented reality interface. This video presents the design evolution iterations of the LuminAR prototypes. In this video we document LuminAR's design process, hardware and software implementation and demonstrate new kinetic interaction techniques. The work presented is motivated through a set of applications that explore scenarios for interactive and kinetic projected augmented reality interfaces. It also opens the door for further explorations of kinetic interaction and promotes the adoption of projected augmented reality as a commonplace user interface modality.

The Interactive Punching Bag

Marian Petre, Chris Baines, Michael Baker, Ed Copcutt, Adam Martindale, Taranjit Matharu, Max Petre Easty, *The Open University, UK*

The 'interactive punching bag' transforms a conventional punching bag into a programmable 'smart device' enhanced to provide various forms of stimulus and feedback (sound, lights, and displayed images). The physical characteristics of each punch are captured using impact sensors and accelerometers, and LEDs, speakers and an associated display can be used to provide different prompts and responses. Interactions are logged over time for analysis. The bag was devised as a means of investigating how to design interactions in the context of a fun, physical, familiar object. Preliminary studies suggest that users are surprised and engaged, and that first-time users spend more time in their first encounter if the bag is running an 'unexpected' program (e.g., giggling on impact rather than grunting). However, some users are sensitive about the nature of images and sounds associated with the bag, particularly where there is a conflict with social expectations or values. So far, the interactions that hold users' attention are those, like the musical 'punching bag keyboard', that combine moderate physical activity with a creative element or an intellectual challenge.

TimeBlocks: "Mom, Can I Have Another Block of Time?"

Eiji Hayashi, Martina Rau, Zhe Han Neo, Nastasha Tan, Sriram Ramasubramanian, Eric Paulos, *Carnegie Mellon University, USA*

Time is a difficult concept for parents to communicate with young children. We developed TimeBlocks, a novel tangible, playful object to facilitate communication about concepts of time with young children. TimeBlocks consists of a set of cubic blocks that function as a physical progress bar. Parents and children can physically manipulate the blocks to represent the concept of time. We evaluated TimeBlocks through a field study in which six families tried TimeBlocks for four days at their homes. The results indicate that TimeBlocks played a useful role in facilitating the often challenging task of time-related communication between parents and children. We also report on a range of observed insightful novel uses of TimeBlocks in our study.

Tongueduino: Hackable, High-bandwidth Sensory Augmentation

Gershon Dublon, Joseph A Paradiso, *Massachusetts Institute of Technology, USA*

The tongue is known to have an extremely dense sensing resolution, as well as an extraordinary degree of neuroplasticity, the ability to adapt to and internalize new input. Research has shown that electro-tactile tongue displays paired with cameras can be used as vision prosthetics for the blind or visually impaired; users quickly learn to read and navigate through natural environments, and many describe the signals as an innate sense. However, existing displays are expensive and difficult to adapt. Tongueduino is an inexpensive, vinyl-cut tongue display designed to interface with many types of sensors besides cameras. Connected to a magnetometer, for example, the system provides a user with an internal sense of direction, like a migratory bird. Piezo whiskers allow a user to sense orientation, wind, and the lightest touch. Through tongueduino, we hope to bring electro-tactile sensory substitution beyond the discourse of vision replacement, towards open-ended sensory augmentation that anyone can access.

Towards a Wearable Music System for Nomadic Musicians

Sharyselle Kock, Anders Bouwer, Tantra Rusiyani, Bayo Siregar, *University of Amsterdam, Netherlands*

This concept video shows the design of a wearable system for musicians to record their ideas while being away from their instruments, using an interactive shirt and belt.

Video Mediated Recruitment for Online Studies

Torben Sko, Henry Gardner, *The Australian National University, Australia*

More than ever, researchers are turning to the internet as a means to conduct HCI studies. Despite the promise of a worldwide audience, recruiting participants can still be a difficult task. In this video we discuss and illustrate that videos - through their sharable and entertaining nature - can greatly assist the recruitment process. Videos can also be a crucial part in developing an online presence, which may yield a community of followers and interested individuals. This community in turn can provide many long term benefits to the research, beyond just the recruitment phase.

WatchIt: Simple Gestures for Interacting with a Watchstrap

Simon Perrault, Sylvain Malacria, Yves Guiard, Eric Lecolinet, *TELECOM ParisTech, France*

We present WatchIt, a new interaction technique for wristwatch computers, a category of devices that badly suffers from a scarcity of input surface area. WatchIt considerably increases this surface by extending it from the touch screen to the wristband. The video shows a mockup of how simple gestures on the external and/or internal bands may allow the user to scroll a list (one-finger slide), to select an item (tap), and to set a continuous parameter like the volume of music playing (two-finger slide), avoiding the drawback of screen occlusion by the finger. Also shown is the prototype we are currently using to investigate the usability of our new interaction technique.

Which Book Should I Pick?

Hyoyoung Kim, Dongseop Lee, Jin Wan Park, *Chung-Ang University, Republic of Korea*

This video proposes readability visualization, genre visualization, and combined visualization to provide unconventional information for book selection. Data visualization was initiated for the practical purpose of delivering information, as it efficiently links visual perception and data so that readers are able to instantly recognize patterns in overcrowded data. In this interdisciplinary research we used the strength of data visualization, and this paper suggests three possible textual visualizations of a book, which may help users to find a desirable book, with the use of intuitive information out of a large volume of book data.

■ CHI 2012 POSTERS

Posters are located in the Commons (Exhibit Hall 4, Level 1). Poster authors are scheduled to stand by their posters during times indicated below. Please visit the posters each day to see all of the exciting work being done and discuss new ideas with poster presenters.

Tuesday (10:50 - 11:30)

Works-In-Progress focusing on:
 Design (WIP100 - WIP147)
 User Experience (WIP200 - WIP247)

Wednesday (10:50 - 11:30)

Doctoral Consortium (DC01 - DC14)
 Student Design Competition (SDC01 - SDC15)
 Student Research Competition (SRC01 - SRC10)
 Workshops

Thursday (10:50 - 11:30)

Works-In-Progress focusing on:
 Child-computer Interaction (WIP300 - WIP307)
 Sustainability (WIP400 - WIP407)
 Engineering (WIP500 - WIP515)
 Games and Entertainment (WIP600 - WIP612)
 Health (WIP700 - WIP718)
 Other Topics (WIP719 - WIP834)

■ STUDENT DESIGN COMPETITION
SDC01 | No Place Like Home: Pet-to-Family Reunification After Disaster

Mario Barrenechea, *University of Colorado Boulder, USA*
 Joshua Barron, *University of Colorado, USA*
 Joanne White, *University of Colorado Boulder, USA*

SDC02 | Home2Home: A "Lightweight" Gift-Giving Portal Between Homes

Alexandra Boughton, Arjun Gopalakrishna, Bhavya Udayashankar,
University of Colorado, USA
 Alexandra Morgan, *University of Colorado Boulder, USA*

SDC03 | KidArt: Displaying Children's Art in the Home

Allison Brown, *University of Colorado Boulder, USA*
 Kaitlin Hegarty, *University of Colorado, USA*
 Aileen McCollum, *University of Colorado Boulder, USA*
 Colin Twaddell, *University of Colorado, USA*

SDC04 | weRemember: Letting AD Patients to Enjoy their Home and their Families

Oscar Daniel Camarena Gomez, Rodrigo Juarez Armenta,
 Hugo Huipet, Victor Martinez, *Instituto Tecnológico Autónomo de México, México*

SDC05 | MeCasa: A Family Virtual Space

Tyler Davis, Camie Steinhoff, Mari Vela, *Missouri Western State University, USA*

SDC06 | Anchor: Connecting Sailors to Home

Jacob Farny, Matthew Jennex, Rebekah Olsen, Melissa Rodriguez,
Indiana University, USA

SDC07 | Feelybean: Communicating Touch Over Distance.

Dimitrios Kontaris, Daniel Harrison, Evgenia - Eleni Patsoule,
 Susan Zhuang, Annabel Slade, *University College London, UK*

SDC08 | Habitag: Virtually Home

Hsein Chin, Samuel Heng, Jianxiong, Kevin Lin, Teng Chek Lim,
 Kaili Agatha Soh, *National University of Singapore, Singapore*

SDC09 | Shoji: Communicating Privacy

Caroline Laroche Lortie, Benoit Rochon, Serge Pelletier,
 Joëlle Sasseville, *Université Laval, Canada*

SDC10 | fridgeTop: Bringing home-like experience back to kitchen space

Shwetangi Savant, Gin L Chieng, Szu-Hsuan Lai, Yi-yu Lin, Ityam
 Vasal, *University of Michigan, USA*

SDC11 | Bzzzt - When Mobile Phones Feel At Home

Susanne Stadler, Stefan Riegler, Stefan Hinterkörner, *University of Salzburg, Austria*

SDC12 | Moodcasting: Home as Shared Emotional Space

Abigale Stangl, *University of Colorado Boulder, USA*
 Joshua Wepman, Dylan White, *University of Colorado, USA*

SDC13 | Silka: A Domestic Technology to Mediate the Threshold between Connection and Solitude

Katarzyna Stawarz, Jesper Garde, Ciaran McLoughlin,
 Robert Nicolaides, Jennifer Walters, *University College London, UK*

SDC14 | SharryBot: A Mobile Agent for Facilitating Communication in a Neighborhood

Sevgi Uzungelis, Christoph Braeunlich, Siarhei Pashkou,
 Konstantin Zerebcov, Sarah Mennicken, *University of Zurich*

SDC15 | StoryCubes: Connecting elders in independent living through storytelling

Micah Linnemeier, Yi-Ying Lin, Gierad Laput,
 Ramachandra Vijjapurapu, *University of Michigan, USA*

■ STUDENT RESEARCH COMPETITION
SRC01 | Impact of Platform Design on Cross-language Information Exchange

Scott Hale, *Oxford Internet Institute, University of Oxford, UK*

SRC02 | Personal Task Management: My Tools Fall Apart When I'm Very Busy!

Amirrudin Kamsin, *University College London, UK*

SRC03 | ScreenMatch: Providing Context to Software Translators by Displaying Screenshots

Geza Kovacs, *Massachusetts Institute of Technology, USA*

SRC04 | A Multi-user Collaborative Space for Architectural Design Reviews

Viswanathan Kumaragurubaran, *University of Washington, USA*

SRC05 | Symbolic Documentation: Toward Fashion-related Sustainable Design

Yue Pan, *Indiana University, USA*

SRC06 | PartoPen: Enhancing the Partograph with Digital Pen Technology

Heather Underwood, *University of Colorado Boulder, USA*

SRC07 | Third-Party Applications' Data Practices on Facebook

Na Wang, *The Pennsylvania State University, USA*

SRC08 | Mobile Continuous Reading

Chen-Hsiang Yu, *Massachusetts Institute of Technology, USA*

SRC09 | A Framework for Interactive Paper-craft System

Kening Zhu, *Keio-NUS CUTE Center, Singapore*

SRC10 | SocialProof: Using Crowdsourcing for Correcting Errors to Improve Speech Based Dictation Experiences

Shaojian Zhu, *UMBC, USA*

■ DOCTORAL CONSORTIUM

DC01 | Designing Alternate Reality Games

Elizabeth Bonsignore, *University of Maryland, USA*

DC02 | An Idea Garden for End-User Programmers

Jill Cao, *Oregon State University, USA*

DC03 | Urban HCI - Interaction Patterns in the Built Environment

Patrick Tobias Fischer, *University of Strathclyde, UK*

DC04 | Materializing and Crafting Cherished Digital Media

Connie Golsteijn, *University of Surrey, UK*

DC05 | Imaginary Interfaces: Touchscreen-like Interaction without the Screen

Sean Gustafson, *Hasso Plattner Institute, Germany*

DC06 | Designing Effective Behaviors for Educational Embodied Agents

Chien-Ming Huang, *University of Wisconsin-Madison, USA*

DC07 | Supporting Design for Mobile People: a Material-istic Approach

Michael Leitner, *Northumbria University, UK*

DC08 | Examining and Designing Community Crime Prevention Technology

Sheena Lewis, *Northwestern University, USA*

DC09 | Designing Immersive Simulations for Collective Inquiry

Michelle Lui, *University of Toronto, Canada*

DC10 | Creative Self-Expression in Socio-Technical Systems

Tyler Pace, *Indiana University, USA*

DC11 | The Application of Multiple Modalities for Improved Home Care Reminders

David Warnock, *University of Glasgow, UK*

DC12 | The Role of Music in the Lives of Homeless Young People in Seattle WA and Vancouver BC

Jill Woelfer, *University of Washington, USA*

DC13 | When Hand and Device Melt into a Unit. Microgestures on Grasped Objects

Katrin Wolf, *Deutsche Telekom Laboratories, Germany*

DC14 | Creative Drawing with Computers

Stanislaw Zabramski, *Uppsala University, Sweden*

■ WORKS IN PROGRESS - DESIGN

WIP100 | Postboard: Free-Form Tangible Messaging for People with Aphasia (and Other People)

Abdullah Al Mahmud, *Delft University of Technology, Netherlands*

Sander Dijkhuis, Liza Blummel, Iris Elberse, *Eindhoven University of Technology, Netherlands*

WIP101 | Understanding Designer Brainstorms: The Effect of Analog and Digital Interfaces on Dominance

Marie Bautista, Jared Crane, Jeff Largent, Jingya Yu, Shaowen Bardzell, *Indiana University, USA*

WIP102 | Do Cognitive Styles of Users Affect Preference and Performance Related to CAPTCHA Challenges?

Marios Belk, Christos Fidas, *University of Cyprus, Cyprus*
Panagiotis Germanakos, *University of Nicosia, Cyprus*
George Samaras, *University of Cyprus, Cyprus*

WIP103 | Visualizing Sentiments in Business-Customer Relations with Metaphors

Guia Gali, Symon Oliver, Fanny Chevalier, Sara Diamond, *OCAD University, Canada*

WIP104 | MixT: Automatic Generation of Step-by-Step Mixed Media Tutorials

Pei-Yu Chi, Sally Ahn, Amanda Ren, Björn Hartmann, *University of California, Berkeley, USA*

Mira Dontcheva, Wilmot Li, *Adobe Systems, USA*

WIP105 | Sharing Narrative and Experience: Digital Stories and Portraits at a Women's Centre

Rachel Clarke, Peter Wright, *Newcastle University, UK*
John McCarthy, *University College Cork, Ireland, Ireland*

WIP106 | Sketch-based Interface for Interaction with Unmanned Air Vehicles

Danielle Cummings, *Texas A&M University, USA*
Stephane Fymat, *Polarity Labs Inc., USA*
Tracy Hammond, *Texas A&M University, USA*

WIP107 | Exquisite Corpses that Explore Interactions

Audrey Desjardins, Ron Wakkary, Xiao Zhang, *Simon Fraser University, Canada*

WIP108 | Exploring Material-Centered Design Concepts for Tangible Interaction

Tanja Döring, *University of Bremen, Germany*
Axel Sylvester, *Independent Researcher, Germany*
Albrecht Schmidt, *University of Stuttgart, Germany*

WIP109 | Spatial Awareness and Intelligibility for the Blind: Audio-Touch Interfaces.

Juan Diego Gomez, Guido Bologna, Thierry Pun, *University of Geneva, Switzerland*

WIP110 | It's Neat to Feel the Heat: How Can We Hold Hands at a Distance?

Daniel Gooch, Leon Watts, *University of Bath, UK*

WIP111 | Deriving Requirements for an Online Community Interaction Scheme: Indications from Older Adults

David Greathead, Lynne Coventry, *Northumbria University, UK*
Budi Arief, Aad van Moorsel, *Newcastle University, UK*

WIP112 | Multiple Visualizations and Debugging: How Do We Co-ordinate These?

Prateek Hejmady, N. Hari Narayanan, *Auburn University, USA*

WIP113 | DigitShadow: Facilitating Awareness of Home Surroundings

Haidan Huang, Davide Bolchini, *Indiana University, USA*

WIP114 | SparkInfo: Designing a Social Space for Co-Creation of Audiovisual Elements and Multimedia Comments

Jee Yeon Hwang, Henry Holtzman, *Massachusetts Institute of Technology, USA*

WIP115 | PseudoButton: Enabling Pressure-Sensitive Interaction by Repurposing Microphone on Mobile Device

Sungjae Hwang, Kwang-yun Wahn, *Korea Advanced Institute of Science and Technology, Republic of Korea*

WIP116 | Tactile Feedback on Flat Surfaces for the Visually Impaired

Ali Israr, Olivier Bau, Seung-Chan Kim, Ivan Poupyrev, *Disney Research, USA*

WIP117 | "Listen2dRoom": Helping Blind Individuals Understand Room Layouts

Myounghoon Jeon, Nazneen Nazneen, Ozum Akanser, Abner Ayala-Acevedo, Bruce Walker, *Georgia Tech, USA*

WIP118 | Back Keyboard: A Physical Keyboard on Backside of Mobile Phone using QWERTY

Hwan Kim, Yea-kyung Row, Geehyuk Lee, *Korea Advanced Institute of Science and Technology, Republic of Korea*

WIP119 | Clerk Agent Promotes Consumers' Ethical Purchasing Behavior in Unmanned Purchase Environment

Atsushi Kimura, Naoki Mukawa, Masahide Yuasa, *Tokyo Denki University, Japan*
Mana Yamamoto, Takashi Oka, *Nihon University, Japan*
Tomohiro Masuda, Yuji Wada, *National Food Research Institute, Japan*

WIP120 | Can Users Live with Overconfident or Unconfident Systems? A Comparison of Artificial Subtle Expressions with Human-like Expression

Takanori Komatsu, Kazuki Kobayashi, *Shinshu University, Japan*
Seiji Yamada, *National Institute of Informatics, Japan*
Kotaro Funakoshi, Mikio Nakano, *Honda Research Institute Japan Co., Ltd., Japan*

WIP121 | Design Principles: Crowdfunding As A Creativity Support Tool

Pei-Yi Kuo, Elizabeth Gerber, *Northwestern University, USA*

WIP122 | Automatic Web Design Refinements based on Collective User Behavior

Luis Leiva, *Institut Tecnològic d'Informàtica, Spain*

WIP123 | Visual Planner: Beyond Prerequisites, Designing an Interactive Course Planner for a 21st Century Flexible Curriculum

Zhen Li, David Tinapple, Hari Sundaram, *Arizona State University, USA*

WIP124 | Super Mirror: A Kinect Interface for Ballet Dancers

Zoe Marquardt, João Beira, Natalia Em, *University of Texas at Austin, USA*
Isabel Paiva, *Universidade Nova de Lisboa, Portugal*
Sebastian Kox, *onseconds, The Netherlands*

WIP125 | Using Visual Website Similarity for Phishing Detection and Reporting

Max-Emanuel Maurer, Dennis Herzner, *University of Munich, Germany*

WIP126 | Video Call, or Not, That is the Question

Andrew L. Kun, Zeljko Medenica, *University of New Hampshire, USA*

WIP127 | eInclusion @ Cyprus Universities: Provision and Web Accessibility

Eleni Michailidou, *Cyprus University of Technology, Cyprus*
Katerina Mavrou, *European University of Cyprus, Cyprus*
Panayiotis Zaphiris, *Cyprus University of Technology, Cyprus*

WIP128 | Towards Stress-less User Interfaces: 10 Design Heuristics Based on the Psychophysiology of Stress

Neema Moraveji, Charlton Soesanto, *Stanford University, USA*

WIP129 | MammiBelli: Sharing Baby Activity Levels Between Expectant Mothers and Their Intimate Social Groups

Mary Hui, Christine Ly, Carman Neustaedter, *Simon Fraser University, Canada*

WIP130 | Hands-Up: Motion Recognition using Kinect and a Ceiling to Improve the Convenience of Human Life

JongHwan Oh, Yerhyun Jung, Yongseok Cho, Chaewoon Hahm, Hyeyoung Sin, Joonhwan Lee, *Seoul National University, Republic of Korea*

WIP131 | Touch & Detach: Physics-based Unbinding and Observation of Complex Virtual Objects in 3D Space

Mai Otsuki, Tsutomu Oshita, Asako Kimura, Fumihisa Shibata, Hideyuki Tamura, *Ritsumeikan University, Japan*

WIP132 | VizDeck: A Card Game Metaphor for Fast Visual Data Exploration

Bill Howe, Alicia Key, Daniel Perry, Cecilia Aragon, *University of Washington, USA*

WIP133 | What's the Best Music You Have? Designing Music Recommendation for Group Enjoyment in GroupFun

George Popescu, Pearl Pu, *EPFL, Switzerland*

WIP134 | Has NFC the Potential to Revolutionize Self-reported Electronic Data Capture? - An Empirical Comparison of Different Interaction Concepts

Andreas Prinz, Philipp Menschner, Jan Marco Leimeister, *Kassel University, Germany*

WIP135 | Knob: Pet-like Interactive Door Knob

Yong-Kwan Kim, Yea-Kyung Row, Tek-Jin Nam, *Korea Advanced Institute of Science and Technology, Republic of Korea*

WIP136 | Photocation: Tangible Learning System for DSLR Photography

Kilian Moser, *Center for Digital Technology & Management, Germany*
Martin Kiechle, Kimiko Ryokai, *University of California, Berkeley, USA*

WIP137 | A Platform for Large-Scale Machine Learning on Web Design

Arvind Satyanarayan, Maxine Lim, Scott Klemmer, *Stanford University, USA*

WIP138 | How to Use Behavioral Research Insights on Trust for HCI System Design

Matthias Söllner, Axel Hoffmann, Holger Hoffmann, Jan Marco Leimeister, *Kassel University, Germany*

WIP139 | Opportunistic Engagement by Designing on the Street

Stephen Lindsay, Nick Taylor, Patrick Olivier, *Newcastle University, UK*

WIP140 | Unearthing the Family Gems: Design Requirements for a Digital Reminiscing System for Older Adults

Elizabeth Thiry, Mary Beth Rosson, *Pennsylvania State University, USA*

WIP141 | Smart Material Interfaces: A New Form of Physical Interaction

Dhaval Vyas, Wim Poelman, Anton Nijholt, Arnout De Bruijn, *University of Twente, Netherlands*

WIP142 | Investigating One-Handed Multi-digit Pressure Input for Mobile Devices

Graham Wilson, David Hannah, Stephen Brewster, Martin Halvey, *University of Glasgow, UK*

WIP143 | Designing For the Task: What Numbers are Really Used in Hospitals?

Sarah Wiseman, Anna Cox, Duncan Brumby, *University College London, UK*

WIP144 | Does Proprioception Guide Back-of-Device Pointing as Well as Vision?

Katrin Wolf, *Technische Universität, Germany*
Christian Mueller-Tomfelde, *CSIRO ICT Centre, Australia*
Kelvin Cheng, *CSIRO, Australia*
Ina Wechsung, *Technische Universität, Berlin, Germany*

WIP145 | Hold That Thought: Are Spearcons Less Disruptive than Spoken Reminders?

Maria Wolters, Karl Isaac, Jason Doherty, *University of Edinburgh, UK*

WIP146 | Modeling Dwell-based Eye Pointing at Two-dimensional Targets

Xinyong Zhang, Wenxin Feng, *Renmin University of China, China*
Hongbin Zha, *Peking University, China*

WIP147 | Informing User Experience Design about Users: Insights from Practice

Derya Ozcelik Buskermolen, Jacques Terken, Berry Eggen, *Eindhoven University of Technology, Netherlands*

■ WORKS IN PROGRESS - USER EXPERIENCE

WIP200 | The Effects of Positive and Negative Self-Interruptions in Discretionary Multitasking

Rachel Adler, *CUNY, USA*

Raquel Benbunan-Fich, *Baruch College, CUNY, USA*

WIP201 | FlyTalk: Social Media to Meet the Needs of Air Travelers

Kagonya Awori, Emily Clark, Andreia Gonçalves, Troy Effner,

Ya Chun Yang, *Carnegie Mellon University, USA*

Ian Oakley, Nuno Nunes, *University of Madeira, Portugal*

WIP202 | Seamless and Continuous User Identification for Interactive Tabletops Using Personal Device Handshaking and Body Tracking

Christopher Ackad, Andrew Clayphan, Roberto Martinez Maldonado,

Judy Kay, *University of Sydney, Australia*

WIP203 | Mobile Applications to Support Dietary Change: Highlighting the Importance of Evaluation Context

Jill Freyne, Emily Brindal, Gilly Hendrie, Shlomo Berkovsky,

Mac Coombe, *CSIRO, Australia*

WIP204 | Investigating In-car Safety Services on the Motorway: the Role of Screen Size

Peter Fröhlich, Matthias Baldauf, Stefan Suetter, Dietmar Schabus,

Matthias Fuchs, *FTW Telecommunications Research Center Vienna, Austria*

WIP205 | Values in Action (ViA) - Combining Usability, User Experience and User Acceptance

Verena Fuchsberger, Christiane Moser, Manfred Tscheligi,

University of Salzburg, Austria

WIP206 | Designing a Tool for Exploratory Information Seeking

Gene Golovchinsky, Anthony Dunnigan, *FX Palo Alto Laboratory, Inc., USA*

Abdigani Diriye, *University College London, UK*

WIP207 | Understanding Effects of Time and Proximity on Collaboration: Implications for Technologies to Support Collaborative Information Seeking

Roberto González-Ibáñez, Muge Haseki, Chirag Shah, *Rutgers, USA*

WIP208 | Using Affect to Evaluate User Engagement

Jennefer Hart, *The University of Manchester, UK*

Alistair Sutcliffe, *University of Manchester, UK*

Antonella De Angeli, *University of Trento, Italy*

WIP209 | Drawing Shapes and Lines: Spawning Objects on Interactive Tabletops

Tobias Hesselmann, *OFFIS Institute for Information Technology, Germany*

Volker Gollücke, *University of Oldenburg, Germany*

Benjamin Poppinga, Wilko Heuten, *OFFIS Institute for Information Technology, Germany*

Susanne Boll, *University of Oldenburg, Germany*

WIP210 | The Routines and Social Behaviours of Frequent mCommerce Shoppers

Serena Hillman, Carman Neustaedter, John Bowes, *Simon Fraser University, Canada*

WIP211 | MicPen: Pressure-Sensitive Pen Interaction Using Microphone with Standard Touchscreen

Sungjae Hwang, Andrea Bianchi, Kwangyun Wohn,

Korea Advanced Institute of Science and Technology, Republic of Korea

WIP212 | Dream Drill: Learning Application

Aya Ikeda, *Ochanomizu University, Japan*

Toshifumi Arai, *Citizen Holdings Co.,Ltd., Japan*

Itiro Siio, *Ochanomizu University, Japan*

WIP213 | The Usefulness of an Immersion Questionnaire in Game Development

Johanna Huhtala, Poika Isokoski, Saila Ovaska, *University of Tampere, Finland*

WIP214 | Towards a Combined Method of Web Usability Testing: An Assessment of the Complementary Advantages of Lab Testing, Pre-Session Assignments, and Online Usability Services

Christopher Jewell, Franco Salvetti, *Microsoft Research, USA*

WIP215 | Kinetic Device: Designing Interactions with a Deformable Mobile Interface

Johan Kildal, Susanna Paasovaara, Viljakaisa Aaltonen, *Nokia Research Center, Finland*

WIP216 | Ghost Fingers: A Hybrid Approach to the Interaction with Remote Displays

Seung Wook Kim, Stefan Marti, *Hewlett-Packard, USA*

WIP217 | Cooking Together: A Digital Ethnography

Jeni Paay, Jesper Kjeldskov, Mikael B. Skov, *Aalborg University, Denmark*

Kenton O'Hara, *Microsoft Research, UK*

WIP218 | Care Robot Able to Show the Order of Service Provision through Bodily Actions in Multi-Party Settings

Yoshinori Kobayashi, Keiichi Yamazaki, *Saitama University, Japan*

Akiko Yamazaki, *Tokyo University of Technology, Japan*

Masahiko Gyoda, Tomoya Tabata, Yoshinori Kuno, Yukiko Seki,

Saitama University, Japan

WIP219 | Applying Participatory Design Theory to Designing Evaluation Methods

Diana Kusunoki, Aleksandra Sarcevic, *Drexel University, USA*

WIP220 | rainBottles: Gathering Raindrops of Data from the Cloud

Jinha Lee, *MIT Media Laboratory, USA*

Greg Vargas, Mason Tang, *Massachusetts Institute of Technology, USA*

Hiroshi Ishii, *MIT Media Laboratory, USA*

WIP221 | The Meanings of Music Sharing in Tween Life

Vilma Lehtinen, *Aalto University, Finland*

Lassi Liikkanen, *Helsinki Institute for Information Technology, Finland*

WIP222 | Shape Your Body: Control a Virtual Silhouette Using Body Motion

Luís Leite, *Faculdade de Engenharia da Universidade do Porto, Portugal*

Veronica Orvalho, *Instituto de Telecomunicações, Portugal*

WIP223 | The Hankie Probe: a Materialistic Approach to Mobile UX Research

Michael Leitner, Gilbert Cockton, Joyce Yee, Thomas Greenough, *Northumbria University, UK*

WIP224 | GestureCommander: Continuous Touch-based Gesture Prediction

George Lucchese, Martin Field, Jimmy Ho, Ricardo Gutierrez-Osuna, Tracy Hammond, *Texas A&M University, USA*

WIP225 | Test-driven Development for the Web – Increasing Efficiency of Web Development

Jalal Mahmud, Clemens Drews, *IBM Almaden, USA*

Michael Collins, *Dealer.com, USA*

Arnaldo Carreno-Fuentes, *IBM Almaden, USA*

Alex Bullard, *Middlebury College, USA*

Mark Vickstrom, *Cisco Systems, USA*

Margaret Cho, *IBM, USA*

WIP226 | Participatory Design of Social Search Experiences

Nick Matterson, *Carnegie Mellon University, USA*

David Choi, *Google Inc., USA*

WIP227 | Turtledove: A Tangible Grain Interface for Image Organization

Oliver Metz, *Bielefeld University, Germany*

Christian Leichsenring, René Tünnermann, *Center of Excellence for Cognitive Interaction Technology, Germany*

Thomas Hermann, *CITEC, Bielefeld University, Germany*

Till Bovermann, *Aalto University, Finland*

WIP228 | ResEval Mash: A Mashup Tool that Speaks the Language of the User

Imran Muhammad, Daniel Florian, Casati Fabio,

Marchese Maurizio, *University of Trento, Italy*

WIP229 | A Sensemaking Environment for Literary Text

Aditi Muralidharan, Marti A. Hearst, *University of California, Berkeley, USA*

WIP230 | EyeRing: A Finger-worn Assistant

Suranga Nanayakkara, *Singapore University of Technology and Design, Singapore*

Roy Shilkrot, Pattie Maes, *Massachusetts Institute of Technology, USA*

WIP231 | A Security Assessment of Tiles: A New Portfolio-Based Graphical Authentication System

James Nicholson, *Northumbria University, UK*

Paul Dunphy, *Newcastle University, UK*

Lynne Coventry, Pamela Briggs, *Northumbria University, UK*

Patrick Olivier, *Newcastle University, UK*

WIP232 | Couch Mobility – The Cell Phone's Most Important Feature at Home is Mobility

Stina Nylander, *Swedish Institute of Computer Science*

Jenny Fådal, Saman Mottaghy, *Stockholm University, Sweden*

WIP233 | In Search of Theoretical Foundations for UX Research and Practice

Marianna Obrist, *Newcastle University, UK*

Virpi Roto, *Aalto University, Finland*

Arnold Vermeeren, *Delft University of Technology, Netherlands*

Kaisa Väänänen-Vainio-Mattila, *Tampere University of Technology, Finland*

Effie Lai-Chong Law, *University of Leicester, UK*

Kari Kuutti, *University of Oulu, Finland*

WIP234 | Kinect in the Kitchen: Testing Depth Camera Interactions in Practical Home Environments

Galen Panger, *University of California, Berkeley, USA*

WIP235 | Multitasking in e-Learning Environments: Users' Multitasking Strategies and Design Implications

Ji Hyun Park, Min Liu, *University of Texas at Austin, USA*

WIP236 | "Check Out Where I Am!": Location-Sharing Motivations, Preferences, and Practices

Sameer Patil, Gregory Norcie, Apu Kapadia, *Indiana University, USA*

Adam Lee, *University of Pittsburgh*

WIP237 | Emotion as an Indicator for Future Interruptive Notification Experiences

Celeste Paul, Anita Komlodi, *University of Maryland Baltimore County, USA*

WIP238 | Phonetic Shapes: An Interactive, Sonic Guest Book

Mary Pietrowicz, *University of Illinois at Urbana-Champaign, USA*

Karrie Karahalios, *University of Illinois, USA*

WIP239 | Display Blocks: Cubic Displays for Multi-Perspective Visualization

Pol Pla, Pattie Maes, *Massachusetts Institute of Technology, USA*

WIP240 | HCI Professions: Differences & Definitions

Cynthia Putnam, *DePaul University, USA*
Beth Kolko, *University of Washington, USA*

WIP241 | Point-and-Shoot Data

Stephanie Lin, *Harvard University, USA*
Samuel Luescher, Travis Rich, Shaun Salzberg, Hiroshi Ishii,
Massachusetts Institute of Technology, USA

WIP242 | Webbox+Page Blossom: Exploring Design for AKTive Data Interaction

m.c. schraefel, Daniel Smith, Max Van Kleek, *University of Southampton, UK*

WIP243 | Initial Approaches for Extending Sketch Recognition to Beyond-Surface Environments

Paul Taele, Tracy Hammond, *Texas A&M University, USA*

WIP244 | Video Increases the Perception of Naturalness During Remote Interactions with Latency

Jennifer Tam, Elizabeth Carter, Sara Kiesler, Jessica Hodgins,
Carnegie Mellon University, USA

WIP245 | Slant Menu: Novel GUI Widget with Ergonomic Design

Ayumi Tomita, Keisuke Kambara, Itiro Siio, *Ochanomizu University, Japan*

WIP246 | Increasing the Reliability and Validity of Quantitative Laddering Data with LadderUX

Vero Vanden Abeele, *Leuven Engineering College, Leuven, Belgium*
Erik Hauters, *LadderUX.org, Belgium*
Bieke Zaman, *Centre for User Experience Research (CUO), Belgium*

WIP247 | Tagging Might Not be Slower than Filing in Folders

Karl Voit, *Institute for Software Technology, Austria*
Keith Andrews, *Institute for Information Systems and Computer Media, Austria*
Wolfgang Slany, *Institute for Software Technology, Austria*

WIP248 | Keyword Clouds: Having Very Little Effect on Sensemaking in Web Search Engines

Mathew Wilson, Jonathan Hurlock, Max Wilson, *Swansea University, UK*

WIP249 | Reinforcement of Spatial Perception for Stereoscopic 3D on Mobile Handsets

Seunghyun Woo, Hyojin Suh, Hosang Cheon, *LG Electronics, Republic of Korea*

■ WORKS IN PROGRESS - CHILD-COMPUTER INTERACTION**WIP300 | SINQ: Scientific INQuiry Learning using Social Media**

June Ahn, Michael Gubbels, Jinyoung Kim, Johnny Wu, *University of Maryland, USA*

WIP301 | Programming by Voice: A Hands-Free Approach for Motorically Challenged Children

Amber Wagner, Ramaraju Rudraraju, Srinivasa Datla, Avishek Banerjee,
Mandar Sudame, Jeff Gray, *University of Alabama, USA*

WIP302 | Climbing the Cool Wall: Exploring Teenage Preferences of Cool

Daniel Fitton, Matthew Horton, Janet C. Read, *University of Central Lancashire, UK*
Linda Little, Nicola Toth, *Northumbria University, UK*

WIP303 | School Friendly Participatory Research Activities with Children

Matthew Horton, Janet C. Read, Emanuela Mazzone, Gavin Sim,
Daniel Fitton, *University of Central Lancashire, UK*

WIP304 | Family Interaction for Responsible Natural Resource Consumption

Francisco Lepe Salazar, Tetsuo Yamabe, Todorka Alexandrova,
Yefeng Liu, Tatsuo Nakajima, *Waseda University, Japan*

WIP305 | Squishy Circuits as a Tangible Interface

Matthew Schmidtbauer, Samuel Johnson, Jeffrey Jalkio,
AnnMarie Thomas, *University of St. Thomas, USA*

WIP306 | Practices Surrounding Children's Photos in Homes

Dhaval Vyas, *University of Twente, Netherlands*
Gerrit van der Veer, *Open University Netherlands, Netherlands*
Anton Nijholt, *University of Twente, Netherlands*
Guido Grassel, *Nokia Research Center, Finland*

WIP307 | Using Need Validation to Design an Intelligent Tangible Learning Environment

Erin Walker, Winslow Burleson, *Arizona State University, USA*

■ WORKS IN PROGRESS - SUSTAINABILITY**WIP400 | Sensor-Based Physical Interactions as Interventions for Change in Residential Energy Consumption**

Maily Fidler, Sharon Tan, Samar Alqatari, Nishant Bhansali,
Alex Chang, Mia Davis, Eric Kofman, Krystal Lee,
Phounsouk Sivilay, Marilyn Cornelius, *Stanford University, USA*
Brendan Wypich, *Lift Projects, USA*
Banny Banerjee, *Stanford University, USA*

WIP401 | A Subscription-Based Authoring Tool for Mobile Citizen Science Campaigns

Sunyoung Kim, Eric Paulos, *Carnegie Mellon University, USA*

WIP402 | EVERT - Energy Representations for Probing Electric Vehicle Practice

Anders Lundström, Cristian Bogdan, Filip Kis, *KTH - Royal Institute of Technology, CSC, MID, Sweden*
Ingvar Olsson, *Tritech AB, Sweden*
Lennart Fahlén, *SICS AB, Sweden*

WIP403 | Practicing Eco-safe Driving at Scale

Marconi Madrugá Filho, Helmut Prendinger, *National Institute of Informatics, Tokyo, Japan*
Todd Tilma, *Hiroo Gakuen Junior & Senior High School, Japan*
Martin Lindner, Edgar Santos, Arturo Nakasone, *National Institute of Informatics, Tokyo, Japan*

WIP404 | Towards New Widgets to Reduce PC Power Consumption

Ross McLachlan, Stephen Brewster, *University of Glasgow, UK*

WIP405 | HCI and Sustainability: The Role of Macrostructures

Emilie Mollenbach, Jens Hoff, Kasper Hornbæk, *University of Copenhagen, Denmark*

WIP406 | Active Office: Towards an Activity-Promoting Office Workplace Design

Kathrin Probst, Florian Perteneder, Jakob Leitner, Michael Haller, *Media Interaction Lab, Austria*
Andreas Schrempf, *University of Applied Sciences Upper Austria, Austria*
Josef Gloeckl, *aeris-Impulsmöbel, Germany*

WIP407 | Teenagers Talking about Energy: Using Narrative Methods to Inform Design

Nicola Toth, Linda Little, *Northumbria University, UK*
Janet Read, *University of Central Lancashire, UK*
Yukang Guo, *Swansea University, UK*
Daniel Fitton, Matthew Horton, *University of Central Lancashire, UK*

■ WORKS IN PROGRESS - ENGINEERING

WIP500 | TopicViz: Interactive Topic Exploration in Document Collections

Jacob Eisenstein, *Georgia Tech, USA*
Duen Horng Chau, Aniket Kittur, Eric Xing, *Carnegie Mellon University, USA*

WIP501 | A Study on Touch & Hover based Interaction for Zooming

Seungju Han, Joonah Park, *Samsung Advanced Institute of Technology, Republic of Korea*

WIP502 | EasyGroups: Binding Mobile Devices for Collaborative Interactions

Andrés Lucero, Tero Jokela, Arto Palin, Viljakaisa Aaltonen, Jari Nikara, *Nokia Research Center, Finland*

WIP503 | Blaze: Supporting Two-phased Call Graph Navigation in Source Code

Jan-Peter Krämer, Joachim Kurz, Thorsten Karrer, Jan Borchers, *RWTH Aachen University, Germany*

WIP504 | Understanding Communicative Emotions from Collective External Observations

Shiro Kumano, Kazuhiro Otsuka, Dan Mikami, Masafumi Matsuda, Junji Yamato, *NTT Communication Science Laboratories, Japan*

WIP505 | Design of a Shape Dependent Snapping Algorithm

Seongkook Heo, Yong-Ki Lee, Jiho Yeom, Geehyuk Lee, *Korea Advanced Institute of Science and Technology, Republic of Korea*

WIP506 | Using Scribble Gestures to Enhance Editing Behaviors of Sketch Recognition Systems

Wenzhe Li, Tracy Hammond, *Texas A&M University, USA*

WIP507 | An Ecologically Valid Evaluation of Speech Summarization

Anthony McCallum, *University of Toronto, Canada*
Cosmin Munteanu, *National Research Council Canada, Canada*
Gerald Penn, *University of Toronto, Canada*
Xiaodan Zhu, *National Research Council Canada, Canada*

WIP508 | Remote Gaze-Tracking System with Automatic User Calibration Using Particle Filter

Tatsuhiko Ueki, Ryuichi Sugano, Takashi Nagamatsu, Junzo Kamahara, *Kobe University, Japan*

WIP509 | Exploring the Perceptual Space of a Novel Slip-Stick Haptic Surface Display

Hyunsu Ji, *Gwangju Institute of Science and Technology, Republic of Korea*
Ian Oakley, *University of Madeira, Portugal*
Jeonggoo Kang, Jeha Ryu, *Gwangju Institute of Science and Technology, Republic of Korea*

WIP510 | SpeckleEye: Gestural Interaction for Embedded Electronics in Ubiquitous Computing

Alex Olwal, Andrew Bardagjy, *Massachusetts Institute of Technology, USA*
Jan Zizka, *Comenius University, Slovakia*
Ramesh Raskar, *Massachusetts Institute of Technology, USA*

WIP511 | Reconstructing Multiparty Conversation Field by Augmenting Human Head Motions via Dynamic Displays

Kazuhiro Otsuka, Shiro Kumano, Dan Mikami, Masafumi Matsuda, Junji Yamato, *NTT Communication Science Laboratories, Japan*

WIP512 | mashpoint: Supporting Data-centric Navigation on the Web

Igor Popov, *University of Southampton, UK*

WIP513 | Blink Suppression Sensing and Classification

Kazuma Murao, Carson Reynolds, Masatoshi Ishikawa, *The University of Tokyo, Japan*

WIP514 | Distributed Multisensory Signals Acquisition and Analysis in Dyadic Interactions

Ashish Tawari, Cuong Tran, Anup Doshi, *University of California, San Diego, USA*
Zander Thorsten, *Max Planck Institute for Intelligent Systems, Germany*
Mohan Trivedi, *University of California, San Diego, USA*

WIP515 | Age-Specific Predictive Models of Human Performance

Shari Trewin, Bonnie John, John Richards, *IBM T.J. Watson Research Center, USA*

David Sloan, Vicki Hanson, *University of Dundee, UK*

Rachel Bellamy, John Thomas, Calvin Swart, *IBM T.J. Watson Research Center, USA*

■ WORKS IN PROGRESS - GAMES AND ENTERTAINMENT**WIP600 | Transcribing Handwritten Text Images with a Word Soup Game**

Vicent Alabau, Luis Leiva, *Institut Tecnològic d'Informàtica, Spain*

WIP601 | Avatars: Playing with Your Friends' Data

Asier Marzo, Oscar Ardaiz, *Public University of Navarra, Spain*

WIP602 | Everscape: The Making of a Disaster Evacuation Experience

Erico Doirado, *National Institute of Informatics, Japan*

Mignon v. d. Berg, Hans v. Lint, Serge Hoogendoorn, *Delft University of Technology, Netherlands*

Helmut Prendinger, *National Institute of Informatics, Tokyo, Japan*

WIP603 | Mind Maps as Behavior Controllers for Virtual Characters

Tiago Fernandes, José Serra, *Instituto de Telecomunicações, Portugal*

Juan Ordóñez, *Juan P. Ordóñez Game Consulting, Spain*

Veronica Orvalho, *Instituto de Telecomunicações, Portugal*

WIP604 | Using the Kinect to Encourage Older Adults to Exercise: A Prototype

Samyukta Ganesan, Lisa Anthony, *University of Maryland, Baltimore County, USA*

WIP605 | Get Lost: Facilitating Serendipitous Exploration in Location-Sharing Services

Ben Kirman, Conor Linehan, Shaun Lawson, *University of Lincoln, UK*

WIP606 | CTArcade: Learning Computational Thinking While Training Virtual Characters Through Game Play

Tak Yeon Lee, Matthew Louis Mauriello, John Ingraham,

Awalin Sopan, June Ahn, Benjamin B. Bederson, *University of Maryland, USA*

WIP607 | Biometric Storyboards: Visualising Game User Research Data

Pejman Mirza-Babaei, *University of Sussex, UK*

Lennart Nacke, *University of Ontario Institute of Technology, Canada*

Geraldine Fitzpatrick, *Vienna University of Technology, Austria*

Gareth White, *University of Sussex, UK*

Graham McAllister, *Player Research, UK*

Nick Collins, *University of Sussex, UK*

WIP608 | Facilitation of Affection by Tactile Feedback of False Heartbeat

Narihiro Nishimura, Asuka Ishi, Michi Sato, Shogo Fukushima,

Hiroyuki Kajimoto, *The University of Electro-Communications, Japan*

WIP609 | Towards a Game Experience Design Model Centered on Participation

Luis Lucas Pereira, Licinio Roque, *University of Coimbra, Portugal*

WIP610 | Intergenerational Gameplay: Evaluating Social Interaction between Younger and Older Players

Mark Rice, Lih Jie Yau, Jeremy Ong, Marcus Wan, Jamie Ng,

Institute for Infocomm Research, Singapore

WIP611 | Inspiring Creative Constructivist Play

Chadwick Wingrave, Juliet Norton, Christopher Ross, Nathan Ochoa,

Sergiu Veazanchin, Emiko Charbonneau, Joseph LaViola, *UCF, USA*

WIP612 | Snap-n-Fold: Origami Pattern Generation based Real-life Object Structure

Kening Zhu, Chamika Deshan, Owen Noel Newton Fernando,

Keio-NUS CUTE Center, Singapore

■ WORKS IN PROGRESS - HEALTH**WIP700 | Tabletops in Motion: The Kinetics and Kinematics of Interactive Surface Physical Therapy**

Fraser Anderson, Michelle Annett, Walter Bischof, *University of Alberta, Canada*

WIP701 | FEEL: Frequent EDA and Event Logging – A Mobile Social Interaction Stress Monitoring System

Yadid Ayzenberg, Javier Hernandez Rivera, Rosalind Picard,

Massachusetts Institute of Technology, USA

WIP702 | ActivMON: Encouraging Physical Activity Through Ambient Social Awareness

Patrick Burns, Christopher Lueg, *University of Tasmania, Australia*

Shlomo Berkovsky, *Tasmanian ICT Centre*

WIP703 | User Needs in the Performance of Prescribed Home Exercise Therapy

Hitee Chandra, *Carnegie Mellon University, USA*

Ian Oakley, *University of Madeira, Portugal*

Hugo Silva, *PLUX - Wireless Biosignals, Portugal*

WIP704 | Factors Associated with Persistent Participation in an Online Diet Intervention

Jill Freyne, Ian Saunders, Emily Brindal, Shlomo Berkovsky,

Gregory Smith, *CSIRO, Australia*

WIP705 | Meeting Cancer Patient Needs: Designing a Patient Platform

Jeana Frost, *VU Amsterdam, Netherlands*

Nienke Beekers, Bartho Hengst, *Kanker.nl, Netherlands*

Ruud Vendeloo, *Frontwerk, Netherlands*

WIP706 | Constructionism of Virtual Humans to Improve Perceptions of Conversational Partners

Shivashankar Halan, Brent Rossen, Michael Crary, Benjamin Lok,
University of Florida, USA

WIP707 | Controlling the Amount of Physical Activity in a Specific Exertion Interface

Pascal Landry, Narcis Pares, *Universitat Pompeu Fabra, Spain*

WIP708 | Playful Arm Hand Training after Stroke

Luuk Beursgens, *Eindhoven University of Technology, Netherlands*

Annick Timmermans, *Adelante Centre of Expertise in Rehabilitation and Audiology, Netherlands*

Panos Markopoulos, *University of Technology, Netherlands*

WIP709 | BreathTray: Augmenting Respiration Self-Regulation without Cognitive Deficit

Neema Moraveji, Athman Adishesan, Takehiro Hagiwara, *Stanford University, USA*

WIP710 | Wind Runners: Designing a Game to Encourage Medical Adherence for Children with Asthma

Shawn Nikkila, *Arizona State University, USA*

Gaurav Patel, *Rice University, USA*

Hari Sundaram, Aisling Kelliher, *Arizona State University, USA*

Ashutosh Sabharwal, *Rice University, USA*

WIP711 | Sharing Medical Data vs. Health Knowledge in Chronic Illness Care

Aisling Ann O'Kane, *University College London, UK*

Helena Mentis, *Microsoft Research, UK*

WIP712 | A Framework for Designing Assistive Technologies for Teaching Children with ASDs Emotions

Ji Hyun Park, Bretagne Abirached, Yan Zhang, *University of Texas at Austin, USA*

WIP713 | Magic Land on Interactive Tabletop for Play Therapy with Children

Olga Pykhtina, Madeline Balaam, Sue Pattison, Gavin Wood,
Patrick Olivier, *Newcastle University, UK*

WIP714 | Using a High-Resolution Wall-Sized Virtual Microscope to Teach Undergraduate Medical Students

Rebecca Randell, Gordon Hutchins, John Sandars, *University of Leeds, UK*

Thilina Ambepitiya, Darren Treanor, *Leeds Teaching Hospitals NHS Trust, UK*

Rhys Thomas, Roy Ruddle, *University of Leeds, UK*

WIP715 | User Needs for Technology Supporting Physical Activity in Chronic Pain

Tali Swann-Sternberg, Aneesha Singh, Nadia Bianchi-Berthouze,
Amanda Williams, *University College London, UK*

WIP716 | Boneshaker – A Generic Framework for Building Physical Therapy Games

Lieven Van den Audenaeren, Vero Vanden Abeele, Luc Geurts,
Jelle Husson, *Groep T - Leuven Engineering College, Belgium*

Jan-Henk Annema, *Center for User Experience Research, IBBT/CUO, KULeuven, Belgium*

Stef Desmet, *Groep T - Leuven Engineering College, Belgium*

WIP717 | Combining Visual Block Programming and Graph Manipulation for Clinical Alert Rule Building

Dave Krebs, Alexander Conrad, Jingtao Wang, *University of Pittsburgh*

WIP718 | What Colour is 'Exercise?' Designing Multimodal Reminders for the Home

Julie Williamson, Marilyn McGee-Lennon, Stephen Brewster,
University of Glasgow, UK

■ WORKS IN PROGRESS - OTHER TOPICS

WIP719 | We Like to Move it Move it! Motivation and Parasocial Interaction

Jeana Frost, *VU Amsterdam, Netherlands*

Nora Boukris, *VU Public Result, Netherlands*

Peter Roelofsma, *VU Amsterdam, Netherlands*

WIP800 | Kin'touch: Understanding How Visually Impaired People Explore Tactile Maps

Anke Brock, *IRIT, France*

Samuel Lebaz, *Université de Nîmes, France*

Bernard Oriola, *IRIT, France*

Delphine Picard, *Octogone, France*

Christophe Jouffrais, *CNRS, France*

Philippe Truillet, *IRIT, France*

WIP801 | CoStream: In-situ Co-construction of Shared Experiences Through Mobile Video Sharing During Live Events

Niloofer Dezfuli, Jochen Huber, Simon Olberding,

Max Mühlhäuser, *Technische Universität Darmstadt, Germany*

WIP802 | Leveraging the Palm Surface as an Eyes-free TV Remote Control

Niloofer Dezfuli, Mohammadreza Khalilbeigi, Jochen Huber,

Florian 'Floyd' Müller, Max Mühlhäuser, *Technische Universität Darmstadt, Germany*

WIP803 | Magic-Sense: Dynamic Cursor Sensitivity-Based Magic Pointing

Ribel Fares, Dustin Downing, Oleg Komogortsev, *Texas State University, USA*

WIP804 | From Texting App to Braille Literacy

Brian Frey, *University of Maryland Baltimore County, USA*

Kate Rosier, Caleb Southern, Mario Romero, *Georgia Tech, USA*

WIP805 | A Crowdsourcing Quality Control Model for Tasks Distributed in Parallel

Shaojian Zhu, Shaun Kane, Jinjuan Feng, *UMBC, USA*
 Andrew Sears, *Rochester Institute of Technology, USA*

WIP806 | Informing the Design of Group Recommender Systems

Sascha Herr, Andreas Rösch, Christoph Beckmann, Tom Gross,
University of Bamberg, Germany

WIP807 | LightBeam: Nomadic Pico Projector Interaction with Real World Objects

Jochen Huber, Jürgen Steimle, *Technische Universität Darmstadt, Germany*

Chunyuan Liao, Qiong Liu, *FXPAL, USA*

Max Mühlhäuser, *Technische Universität Darmstadt, Germany*

WIP808 | Proximity and Physical Navigation in Collaborative Work With a Multi-Touch Wall-Display

Mikkel Jakobsen, Kasper Hornbæk, *University of Copenhagen, Denmark*

WIP809 | Towards a Better Understanding of Adaptive Multitasking by Individuals

Christian Janssen, Duncan Brumby, *University College London, UK*
 Andrew Howes, *University of Birmingham, UK*

WIP810 | Occlusion-aware Interaction Techniques for Tabletop Systems

Mohammadreza Khalilbeigi, Patrik Schmittat, Max Mühlhäuser,
 Jürgen Steimle, *Technische Universität Darmstadt, Germany*

WIP811 | Design and Evaluation of a Service-Oriented Collaborative Consumption Platform for the Elderly

Philip Koene, Felix Köbler, Sebastian Esch, *Technische Universität München, Germany*

Jan Marco Leimeister, *Kassel University, Germany*

Helmut Krcmar, *Technische Universität München, Germany*

WIP812 | Evaluating Mobile Projectors as a Shared Display Option for Small Groups

Alan Wecker, Tsvi Kuflik, Joel Lanir, *University of Haifa, Israel*
 Oliviero Stock, *FBK-IRST, Italy*

WIP813 | Using Real-time Feedback to Improve Visual Question Answering

Yu Zhong, Phyo Thiha, Grant He, Walter Lasecki, Jeffrey Bigham,
University of Rochester, USA

WIP814 | Self-Correcting Crowds

Walter Lasecki, Jeffrey Bigham, *University of Rochester, USA*

WIP815 | Multi-Touch based Video Selection with an Audio Emotional Curve

Grégoire Lefebvre, *Orange Labs, France*

WIP816 | Supporting Opportunistic Search in Meetings with Tangible Tabletop

Nan Li, Frédéric Kaplan, Omar Mubin, Pierre Dillenbourg, *EPFL, Switzerland*

WIP817 | Sharing Emotion on Facebook: Network Size, Density, and Individual Motivation

Han Lin, Lin Qiu, *Nanyang Technological University, Singapore*

WIP818 | Interacting with Videos On Paper-like Displays

Roman Lissermann, Simon Olberding, Max Mühlhäuser,
 Jürgen Steimle, *Technische Universität Darmstadt, Germany*

WIP819 | Reducing Visual Demand for Gestural Text Input on Touchscreen Devices

Scott MacKenzie, Steven Castellucci, *York University, Canada*

WIP820 | DigiGraff: Considering Graffiti as a Location Based Social Network

David McGookin, Stephen Brewster, Georgi Christov, *University of Glasgow, UK*

WIP821 | Leveraging Motor Learning for a Tangible Password System

Martez Mott, Thomas Donahue, G Michael Poor, Laura Leventhal,
Bowling Green State University, USA

WIP822 | Namibian and American Cultural Orientations Toward Facebook

Anicia Peters, Michael Oren, *Iowa State University, USA*
 Nicola Bidwell, *CSIR-Meraka and Nelson Mandela Metropolitan University, South Africa*

WIP823 | Considerate Supervisor: An Audio-only Facilitator for Multiparty Conference Calls

Rahul Rajan, Cliff Chen, Ted Selker, *Carnegie Mellon University, USA*

WIP824 | An Initial Analysis of Communicability Evaluation Methods through a Case Study

Soraia Reis, Raquel Prates, *Federal University of Minas Gerais, Brazil*

WIP825 | Characterizing the Effectiveness of Twitter Hashtags to Detect and Track Online Population Sentiment

Glívia Angélica Rodrigues Barbosa, Ismael S. Silva, *Federal University of Minas Gerais, Brazil*

Mohammed Zaki, *Rensselaer Polytechnic Institute, USA*

Wagner Meira Jr., Raquel O. Prates, Adriano Veloso, *Federal University of Minas Gerais, Brazil*

WIP826 | Making the Switch: Channel Switching in Romantic Couple Conflict

Lauren Scissors, *Northwestern University, USA*

WIP827 | Tactile Feedback for Button GUI on Touch Devices

Heesook Shin, *Smart Interface Team, ETRI, Republic of Korea*
Jeong-Mook Lim, Jong-uk Lee, Ki-Uk Kyung, *Electronics and Telecommunications Research Institute, Daejeon, Republic of Korea*
Geehyuk Lee, *Korea Advanced Institute of Science and Technology, Republic of Korea*

WIP828 | teleWEAR: Engaging Users and Suppliers of Telecare in Product Design

Andrea Taylor, *Glasgow School of Art, UK*
Lorna Bernard, *Moray Community Health and Social Care Partnership, UK*
Hugh Pizey, Craig Whittet, *Glasgow School of Art, UK*

WIP829 | Effects of Input Device Familiarity on Content Creation and Sharing in Meetings

Himanshu Verma, Flaviu Roman, Patrick Jermann, Pierre Dillenbourg, *EPFL, Switzerland*

WIP830 | Exploring Infrastructure Assemblage in Volunteer Virtual Organizations

Alyson Young, *UMBC, USA*
David Gurzick, *Hood College, USA*
Wayne Lutters, *UMBC, USA*
Caroline Dombrowski, Jeffrey Kim, *University of Washington, USA*

WIP831 | Enhancing Web Page Skimmability

Chen-Hsiang Yu, Robert C. Miller, *Massachusetts Institute of Technology, USA*

WIP832 | Watching You Moving the Mouse, I Know Who You Are

Chun Yu, Yue Shi, Xinliang Wang, Yuanchun Shi, *Tsinghua University, China*

WIP833 | Turning Personal Calendars into Scheduling Assistants

Jacob Bank, Zachary Cain, Yoav Shoham, Caroline Suen, *Stanford University, USA*
Dan Ariely, *Duke University, USA*

WIP834 | How Can a DSL for Expert End-Users be Designed for Better Usability? A Case Study in Computer Music

Hiroki Nishino, *National University of Singapore, Singapore*

■ EXHIBITS

Autodesk (Champion Sponsor) Booth 33

As the world leader in 3D design, engineering and entertainment software, Autodesk helps over 9 million customers, including every member of the Fortune 100, to continually innovate. Our customers design, visualize, and simulate their ideas before they're created. From visual effects to sustainable buildings, their work is visible everywhere. Join us to design the tools the world uses to design!

Bestica, Inc. Booth 19

Bestica is the nation's leading UX Design and Usability staffing firm. We have been successful in assisting groups like Microsoft, Amazon, Samsung and others to identify exclusive and 'hard to find' UX talents for their needs. We respectfully invite companies to give us an opportunity to identify the best UX talents for their UX and Usability needs. Visit www.bestica.com and community.bestica.com.

Bloomberg (Champion Sponsor) Booth 1-2

Bloomberg connects influential decision makers to a dynamic network of information, people and ideas. Our strength - quickly and accurately delivering data, news and analytics through innovative technology - is at the core of everything we do. With over 15,000 employees in 192 locations, we deliver business and financial information, news and insight around the world.

Cambridge Booth 18

Cambridge's publishing in books and journals combines state-of-the-art content with the highest standards of scholarship, writing and production. Visit our stand to browse new titles, available at a 20% discount, and to pick up sample issues of our journals. Visit our website to see everything we do: www.cambridge.org/us/.

Citrix Booth 28

The Citrix Product Design Group is a team of visual and interaction designers, developers, researchers, and writers who craft the applications, across all Citrix product lines, that define our company to the world. Come by our booth to learn more about what we're currently working on - and about opportunities we have at Citrix!

Door64 Booth 26

UXAustin.com is a community within Door64, Austin's largest technology organization. UI/UX was identified this spring by employers as one of the four most critical hires in the quarterly Door64 Austin Hiring PainPoint Survey. Door64 will host the June 29 PainPoint Job Fair, the 2013 UXAustin conference, and more Austin-area events. Visit our booth for discounted attendee and exhibitor packages.

eBay / PayPal (Champion Sponsor) Booth 6-8

eBay is shaping the future of commerce by connecting people to their interests and creating opportunities that often transform their lives. It's an extraordinary time to be a part of the UX community at eBay. Come by our booth to meet our UX team and find out how we're helping to transform the world of commerce.

Elsevier/Morgan Kaufmann Booth 35

Elsevier is a leading publisher with imprint Morgan Kaufmann, home to key titles like *Letting Go of the Words*, *Designing with the Mind in*

Mind, and many more. Elsevier also publishes several journals in the field of HCI including *Interacting with Computers*, *International Journal of Human-Computer Studies*, *Entertainment Computing* and *The International Journal of Child-Computer Interaction*, launching in 2012.

Eye Tech Digital Booth 23

EyeTech's new eye tracker features ultra thin form factor and simple magnetic mounting to enable researchers to switch between multiple computers. Choose from a variety of analysis software for easy multiple user data collection of pupil size, gaze fixation and much more. The new Quick Link 2 API enables developers to design their own custom solutions and provides data collection in real time.

Eyetelect Booth 16

Eyetelect's GazeTracker software has helped researchers and businesses get the most out of their eye-tracking systems for over 15 years. GazeTracker offers the very latest in image, web, user interface and video analysis, combining unmatched analytical power with a simple, easy to use interface. Stop by our booth to see how GazeTracker can save you time while getting the results you need.

Facebook (Contributing Sponsor) Booth 24

No matter what part of Facebook you join, you'll be building something big and new. We welcome pioneers. In fact, we insist on them. If you work for us, you will be able to make an immediate impact. We're hiring Designers, Researchers, Content Strategists and Front End Engineers to help design Facebook and the next set of social experiences across the web. Come find our booth and learn more about the opportunities we have at Facebook.

Google (Champion Sponsor) Booth 31-32

Google's mission is to organize the world's information, making it universally accessible and useful. Every day, we bring our spirit of innovation and entrepreneurship to work. Come by our booth, meet our engineers and researchers, demo some new products and learn about some of the great opportunities we have at Google.

LC Technologies Booth 34

LC Technologies offers a range of eye tracking systems from The EyeFollower 2 that provides automatic eye acquisition, binocular tracking, and 0.45-degree gazepoint tracking accuracy throughout 20x12x15 inch volume to the Eyegaze Edgea Pack, an inexpensive plug-and-play system. All systems are available with optional state-of-the art NYAN analysis software.

Microsoft (Champion Sponsor) Booth 36-38

At Microsoft, we have a passion for Human Computer Interaction: CHI is a big part of what we are all about. Our User Experience profession is a collection of disciplines responsible for the interactions our millions of customers enjoy around the globe. Work at Microsoft and you're on top of the world of technology, collaborating with brilliant people on projects with the potential to change the world. Come by our booth to see the "magic of metro", play Kinect games, pick up free swag, and enter to win Microsoft prizes. Learn about the great opportunities for shaping Human Computer Interaction at Microsoft.

Exhibits

Morgan Claypoole

Booth 9

Morgan & Claypool is publisher of the Synthesis digital library, including the HCI series edited by Jack Carroll.

Northrop Grumman

Booth 3

Northrop Grumman has a 70+ year legacy of engineering and innovation excellence serving a wide variety of military and commercial customers. As we confront the new problems of the information age, we are looking for talented designers, researchers and developers to continue the tradition of excellence. If you think solving the world's complex problems sounds fun, stop by our booth today.

now publishers

Booth 4

Publishers of the highly acclaimed Foundations and Trends journals, peer-reviewed surveys, reviews and tutorials in Human-Computer Interaction. Visit our booth to browse the available titles and meet the publisher. All print titles available for the special CHI price of \$35.

Oracle

Booth 12

Oracle is the world leader in enterprise-class user experiences. Come and see how our team of interaction design, usability engineering, ethnography, and cognitive engineering research professionals help make our customers more productive, everyday.

Samsung

Booth 22

Samsung's philosophy is based on perpetual innovation and good corporate citizenship. Our practices have proven successful - we are one of the fastest growing companies in America, and an acknowledged leader in the digital convergence revolution. The Samsung User Experience group and the San Francisco Bay Area Samsung UX Center America welcome you to CHI 2012.

SAP (Champion Sponsor)

Booth 10

As market leader in enterprise application software, SAP helps companies of all sizes and industries run better. With over 176,000 customers in over 120 countries, the SAP Group includes subsidiaries in every major continent and employs over 54,000 people worldwide. Come by our booth to see how our User Experience professionals are changing the way our customers do business.

Seeing Machines

Booth 27

Developed by Seeing Machines, faceLAB represents the benchmark in flexible, non-contact face and eye tracking. faceLAB offers researchers the ability to objectively measure and analyze human behavior in a wide range of operational conditions, and research settings. Visit us at www.seeingmachines.com.

Sensomotoric

Booth 20

Sensomotoric is a leading provider of eye and gaze tracking systems to a global market. Our advanced analysis software provides visualizations that simplify the interpretation of eye tracking data. Let us show you how to add an eye tracker to your existing set of tools: <http://www.smivision.com/egts>.

SIGCHI

Booth 17

CHI 2012 is sponsored by ACM's Special Interest Group on Computer-Human Interaction (ACM SIGCHI). The scope of SIGCHI

consists of the study of the human-computer interaction processes and includes research, design, development, and evaluation efforts for interactive computer systems. The focus of SIGCHI is on how people communicate and interact with a broadly-defined range of computer systems. SIGCHI serves as a forum for the exchange of ideas among computer scientists, human factors scientists, psychologists, social scientists, designers, educators, and practitioners involved in the design, implementation, and evaluation of interactive computing systems. Over 5,000 professional members of the SIGCHI community work together toward common goals and objectives. Visit SIGCHI at www.sigchi.org.

Smart Eye

Booth 13

SMART EYE PRO is the most flexible and robust 3D Binocular Remote Eye Tracking system on the market - with up to 8 cameras working in one unit. The system is available in 60 or 120 Hz. It allows free head movement with a large head box, is very accurate, easy to use and fast to initiate. SMART EYE PRO will provide measurement data without interruptions - to your satisfaction!

Springer

Booth 29-30

Get hands-on experience with Springer's multi-format publishing model: print - eBook - MyCopy (printed eBooks for \$24.95). Among our CHI 2012 highlight publications are The Connected Home, From Snapshots to Social Media, the HCI Series, and cutting-edge journals such as PUC, CSCW or UMUI. Ensure optimized print and electronic dissemination of your work, too! Get Read. Publish With Springer.

The MIT Press

Booth 14

The MIT Press publishes extensively in the area of Human-Computer Interaction and its' related fields. Please come by our booth to browse our newest and classic titles and receive a 30% discount.

Tobii Technology, Inc.

Booth 5

Tobii Technology is the world leader in eye tracking and eye control products, services and innovation. With Tobii, researchers have powerful tools to evaluate user behavior objectively, and enhance usability studies of websites, software, games, interactive TV, email campaigns, mobile devices and other physical products as well as for signage in real world environments.

University of Colorado Boulder

Booth 25

The University of Colorado Boulder is advancing human-centered computing and informatics research in exciting new directions. Come talk to our students and faculty about research and educational opportunities in Computer Science, ATLAS and Cognitive Science. Visit the poster sessions to see our 5 finalists teams who placed in the Student Design and Student Research Competitions!

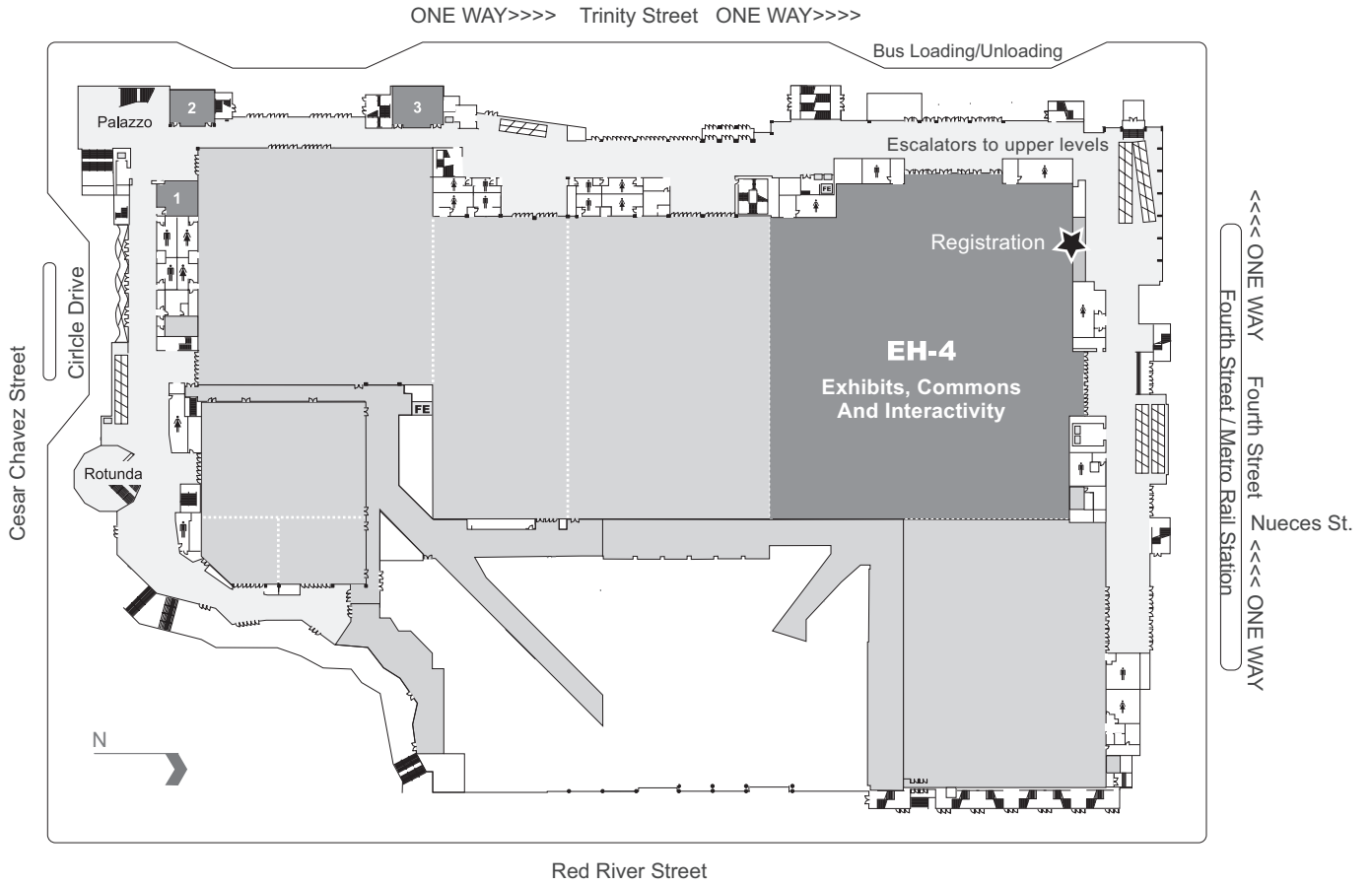
User Zoom

Booth 11

UserZoom is the most comprehensive software platform for online UX research in the market. We offer an on-demand web-based solution, which empowers User Experience and Marketing Professionals to cost-effectively conduct and manage sophisticated online research projects. 50% percent of Fortune Magazine's 50 most admired companies are already using our solution.



Level 1: Austin Convention Center



The Commons (Exhibit Hall 4, Level 1)

EXHIBIT/RECRUITING BOOTHS

1-2	Bloomberg
3	Northrop Grumman
4	now publishers
5	Tobii Technology, Inc.
6-8	eBay / PayPal
9	Morgan Claypoole
10	SAP
11	User Zoom
12	Oracle
13	Smart Eye
14	The MIT Press
16	Eyetelect
17	SIGCHI
18	Cambridge
19	Bestica, Inc
20	Sensomotoric
22	Samsung
23	Eye Tech Digital
24	Facebook
25	University of Colorado Boulder
26	Door64
27	Seeing Machines
28	Citrix
29-30	Springer
31-32	Google
33	Autodesk
34	LC Technologies
35	Elsevier / Morgan Kaufmann
36-38	Microsoft

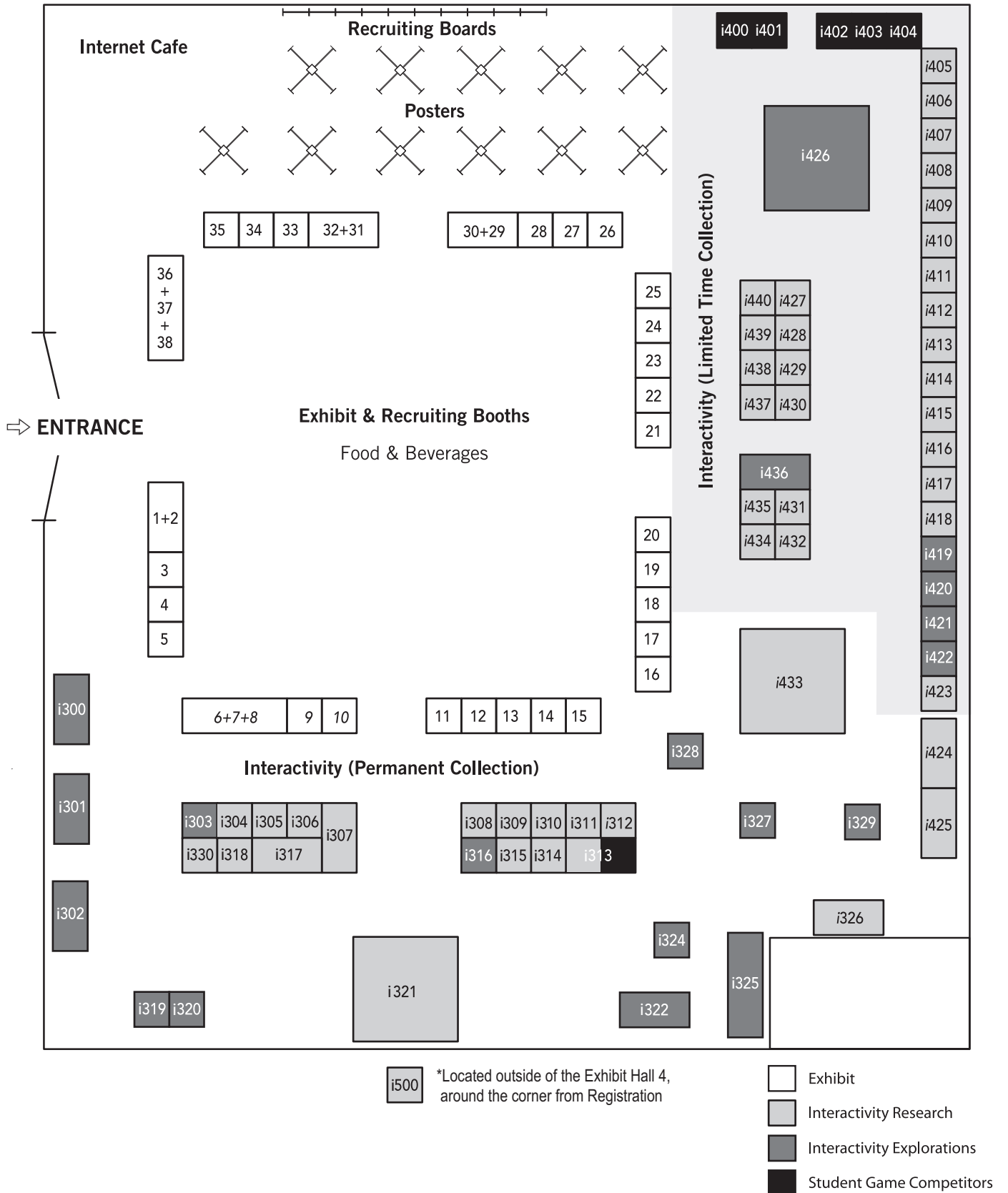
STUDENT GAMES COMPETITORS

i400	Nerd Herder
i401	Hit It!
i402	Power Defense
i403	Motion Chain
i404	BombPlus
i313	Combiform

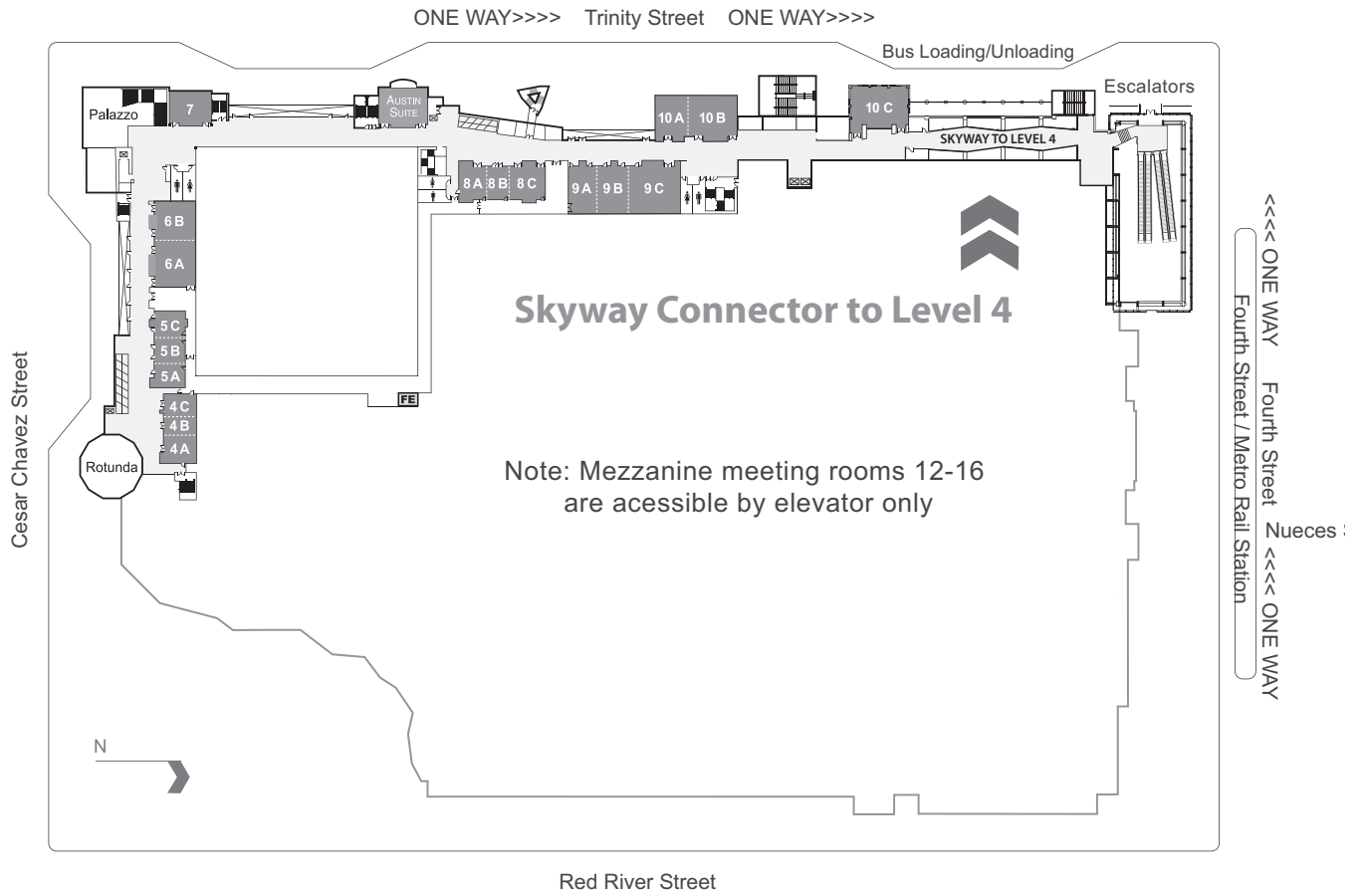
INTERACTIVITY (PERMANENT AND LIMITED TIME COLLECTIONS)

i300	Murmur Study	i409	Design of an Exergaming Station for Children with Cerebral Palsy
i301	HWD Corporation: A Collection of 100 Re-wired Joysticks from the Last 30 Years of Gaming Culture	i410	Scoop! A Movement-based Math Game Designed to Reduce Math Anxiety
i302	Artistic Robot Please Smile	i411	EyeRing: An Eye on a Finger
i303	MelodicBrush: A Cross-Modal Link between Ancient and Digital Art Forms	i412	IllumiShare: Sharing Any Surface
i304	Touché: Enhancing Touch Interaction on Humans, Screens, Liquids, and Everyday Objects	i413	Sketch It, Make It: Sketching Precise Drawings for Laser Cutting
i305	Communitysourcing: Engaging Local Crowds to Perform Expert Work Via Physical Kiosks	i414	A Visual Display of Sociotechnical Data
i306	A Virtual Reality Dialogue System For The Treatment Of Social Phobia	i415	TAP & PLAY: An End-User Toolkit for Authoring Interactive Pen and Paper Language Activities
i307	Cooking with "panavi": Challenging to Professional Culinary Arts	i416	Stackables: Faceted Browsing with Stacked Tangibles
i308	Rewarding the Original: Explorations in Joint User-Sensor Motion Spaces	i417	Interactive Block Device System with Pattern Drawing Capability on Matrix LEDs
i309	DiskPlay: In-Track Navigation on Turntables	i418	The Bohemian Bookshelf: Supporting Serendipitous Book Discoveries through Information Visualization
i310	An Approach and Evaluation of Interactive System Synchronizing Change of Taste and Visual Contents	i419	The Envisioning Cards: A Toolkit for Catalyzing Humanistic and Technical Imaginations
i311	Enabling Concurrent Dual Views on Common LCD Screens	i420	The Chocolate Machine
i312	Beyond Stereo: An Exploration of Unconventional Binocular Presentation for Novel Visual Experience	i421	Pygmy: A Ring-like Anthropomorphic Device That Animates The Human Hand
i313*	Combiform: Beyond Co-attentive Play, a Combinable Social Gaming Platform	i422	PINOKY: A Ring That Animates Your Plush Toys
i314	Virtual Projection: Exploring Optical Projection as a Metaphor for Multi-Device Interaction	i423	Miniature Alive: Augmented Reality-based Interactive DigiLog Experience in Miniature Exhibition
i315	BinCam – A Social Persuasive System to Improve aste Behaviors	i424	Using Augmented Snapshots for Viewpoint Switching and Manipulation in Augmented Reality
i316	Sonik Spring	i425	AHNE: A Novel Interface for Spatial Interaction
i317	Surround Haptics: Tactile Feedback for Immersive Gaming Experiences	i426	The Urban Musical Game: Using Sport Balls as Musical Interfaces
i318	MUSTARD: A Multi User See Through AR Display	i427	GraphTrail: Analyzing Large Multivariate, Heterogeneous Networks while Supporting Exploration History
i319	RobotBuddha	i428	QuickDraw: Improving Drawing Experience for Geometric Diagrams
i320	Lovely Rita	i429	A Handle Bar Metaphor for Virtual Object Manipulation with Mid-Air Interaction
i321a	BodiPod: Interacting with 3D Human Anatomy via a 360° Cylindrical Display	i430	DisplayStacks: Interaction Techniques for Stacks of Flexible Thin-Film Displays
i321b	TeleHuman: Effects of 3D Perspective on Gaze and Pose Estimation with a Life-size Cylindrical Telepresence Pod	i431	Interactive Paper Substrates to Support Musical Creation
i322	Light Arrays	i432	Discovery-based Games for Learning Software
i324	Scorelight & scoreBots	i433	ZeroTouch: An Optical Multi-Touch and Free-Air Interaction Architecture
i325	hipDisk: Experiencing the Value of Ungainly, Embodied, Performative, Fun.	i434	FlexCam – Using Thin-film Flexible OLED Color Prints as a Camera Array
i326	Hanging off a Bar	i435	Toolset to explore visual motion designs in a video game
i327	Touchbox: Intriguing Touch between Strangers	i436	Sifteo Cubes
i328	Herzfassen. A Responsive Object.	i437	iRotate: Automatic Screen Rotation based on Face Orientation
i329	Embroidered Confessions: An interactive quilt of the secrets of strangers	i438	TEROOS: A Wearable Avatar to Enhance Joint Activities
i330	Vignette: Interactive Texture Design and Manipulation with Freeform Gestures for Pen-and-Ink Illustration	i439	Animating Paper Craft using Shape Memory Alloys
i405	360° Panoramic Overviews for Location-Based Services	i440	Augmenting the Scope of Interactions with Implicit and Explicit Graphical Structures
i406	ShoeSense: A New Perspective on Hand Gestures and Wearable Applications	i500	Joggbot: A Flying Robot as Jogging Companion
i407	Mobile ActDresses: Programming Mobile Devices by Accessorizing		
i408	AMARA: The Affective Museum of Art Resource Agent		

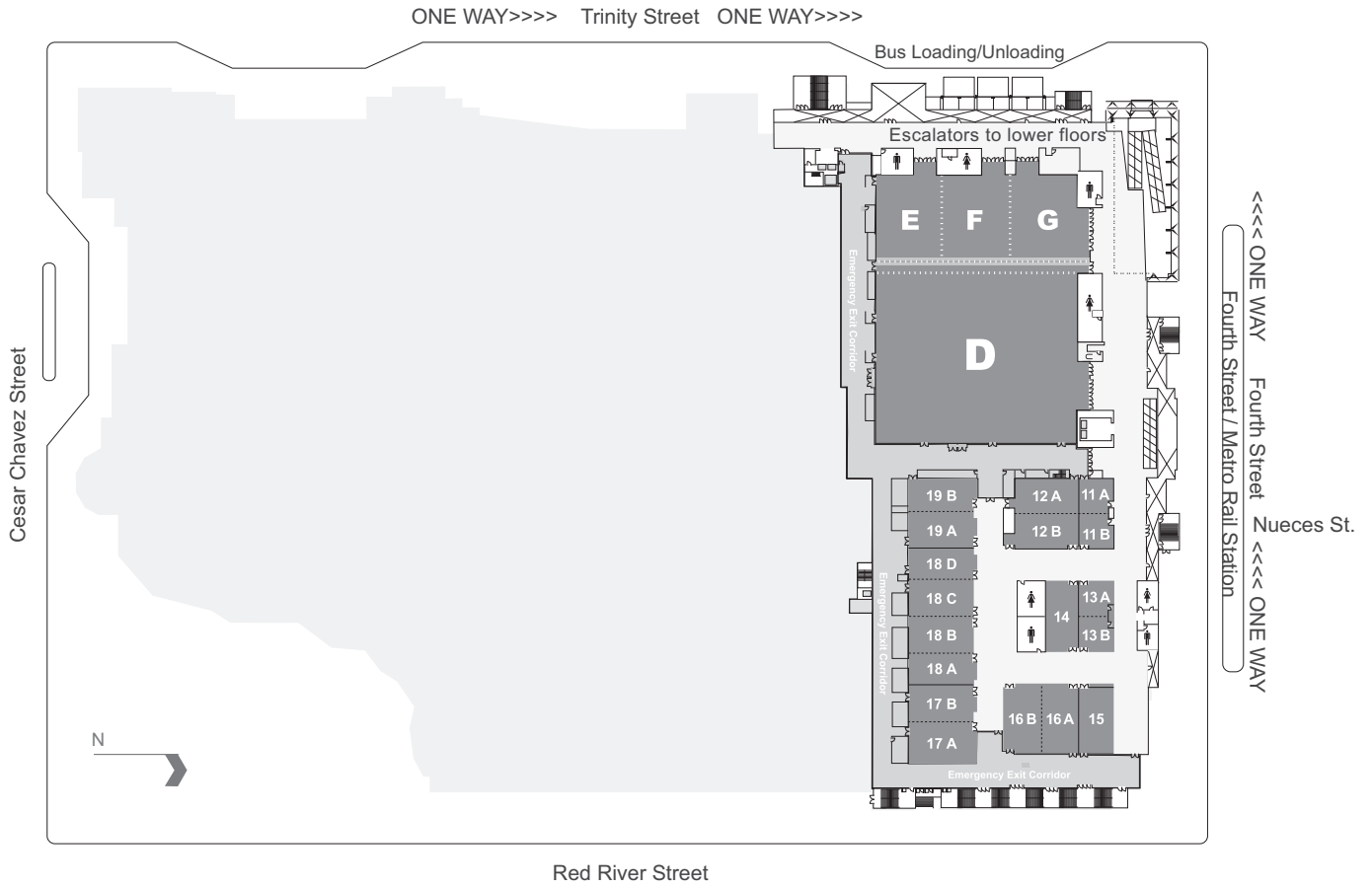
The Commons (Exhibits, Interactivity, Games and Posters)



Level 3: Austin Convention Center



Level 4: Austin Convention Center



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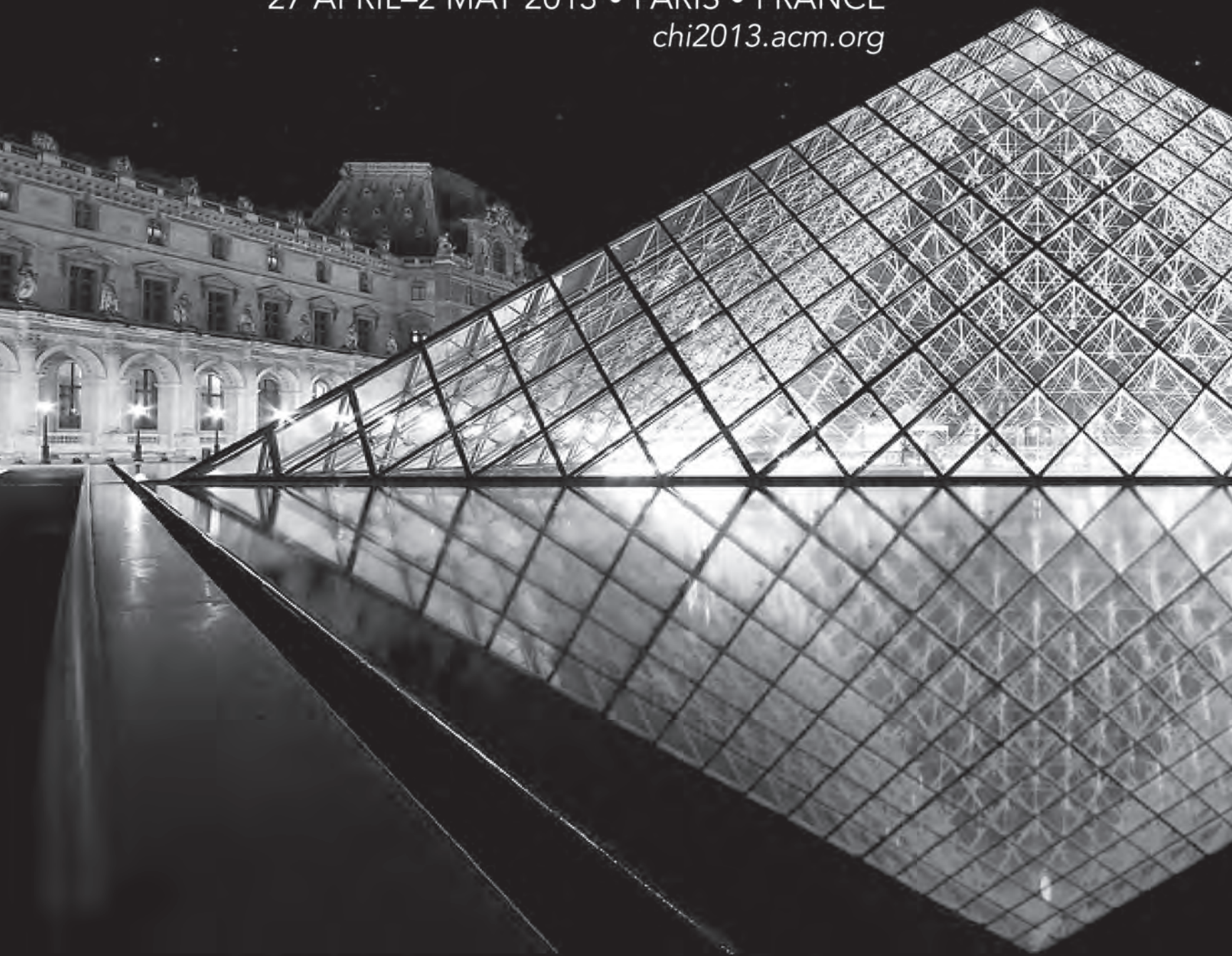
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