CHI 2010
we are HCI
Conference Program
Atlanta, GA, USA | April 10 - 15, 2010

The 28th Annual CHI Conference on Human Factors in Computing Systems
www.chi2010.org
THURSDAY | COURSES

**Advanced Research & Design for Sustainability**
09:00 - 13:00 | CAIRO
INSTRUCTOR:
Daniela Buzas, SAP Labs (Palo Alto), USA
Eli Bleviss, Indiana University (Bloomington), USA

**Developing an Effective Prototyping Strategy**
09:00 - 13:00 | HONG KONG
INSTRUCTORS:
Jonathan Arnovitz, Strossm Interactions, The Netherlands
Dirk-Jan Hoets, Flipside Usability, The Netherlands

**Looking Below the Surface: Understanding and Analyzing Interaction Design**
09:00 - 10:30 | THE LEARNING CENTER
INSTRUCTORS:
Karen Holtzblatt, David Rondeau, InContext Enterprises, USA

**Model-Driven Inquiry: Beyond Ethnography**
09:00 - 13:00 | CHICAGO DEF
INSTRUCTOR:
Larry Constantine, University of Madeira, Portugal

11:30 - 16:00 | THE LEARNING CENTER
INSTRUCTOR:
Aaron Marcus, President, Aaron Marcus and Associates, Inc., USA

**Designing for the Unanticipated**
14:30 - 16:00 | CAIRO
INSTRUCTOR:
Austin Henderson, Pinney Bowes, USA

**Innovation Games® for User Research in an Agile Environment**
14:30 - 16:00 | CAIRO
INSTRUCTOR:
Nancy Frishberg, MSB Associates, USA

**Using Web 2.0 to Learn About Users**
14:30 - 16:00 | HONG KONG
INSTRUCTOR:
Kate Walser, CX Insights, USA
Welcome to CHI 2010!

CHI 2010 is where the latest advances in human-computer interaction can be found. CHI is a shared experience where people learn, discuss, share and interact with each other. CHI is a inclusive community, welcoming many different disciplines and a wide range of interests from research to performance to practice. CHI provides a full program of many different venues and activities rich with opportunities to discover, learn, and interact.

CHI 2010 continues its four-day format and once again we have record numbers of submissions in all categories. Hundreds of people have devoted thousands of hours in reviewing and selecting those pieces of work that will be presented here. We have assembled a jam-packed program including refereed research publications, compelling new media performances, stimulating panel discussions, edgy explorations of the boundaries of HCI, design and research competitions for our students, invited speakers to inspire and inform our future activities, and many forums that enable our community to connect, discover, and learn from each other.

CHI 2010 looks outward to the human experience of computing in the world. This year’s theme “We are HCI” challenges our community to embrace the diversity of human-computer interaction across the world and to exclaim our commitment as a profession to empower people from all walks of life. The contributions of our community are evident in the diversity of human experience. While we can rejoice in the growing relevance that human-computer interaction is experiencing in this millennium, we must also accept growing responsibility for our creations. The CHI 2010 Technical Program—starting with our invited plenary speakers and ending with interactive art exhibitions—exhorts us to understand our work in the context of the lived experience of human life and endeavor.

This year we’ve combined many of the experiential aspects of the CHI conference (such as interactive demos, videos, and design vignettes) into a cohesive Media Showcase. CHI 2010 attendees will have the opportunity to see, touch, squeeze, hear and even smell contrasting forms of HCI. The Media Showcase opens with our conference reception Monday evening and the Exhibition Hall will be alive with performances, interactive demonstrations and exhibits. Additionally, the video screening on Tuesday evening provides an opportunity for many different kinds of design, innovation, opinion and futurism to be presented to the community. We encourage you to come to our theater, grab some popcorn and enjoy the show.

Atlanta is a great site for CHI 2010. “The capital of the New South” has a vibrant and proud heritage in the civil rights movement as “the city too busy to hate”. It is the home to many influential institutions such as The Carter Center, Centers for Disease Control and Prevention (CDC), CARE, and a wide range of business giants including Coca-Cola and Turner Broadcasting. Atlanta is the home to many researchers, designers, teachers, artists and practitioners who share a commitment to the human experience of computing: Georgia Tech and its GVU Center, SCAD Atlanta, Emory, Spelman College, Turner Broadcasting and CNN, The Carter Center, CARE, CDC, IBM, Philips, Moxie Interactive, Roundarch, Matter, Big Bang to name a few. We hope you are able to also explore this great city during your time with us, and hope you enjoy CHI 2010!

Elizabeth Mynatt, Georgia Tech
CHI 2010 Conference Chair

Keith Edwards, Georgia Tech
Tom Rodden, University of Nottingham
CHI 2010 Technical Program Chairs
Conference Committee

CHI 2010 ORGANIZING COMMITTEE

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TECHNICAL PROGRAM

Chairs
W. Keith Edwards, Georgia Institute of Technology
Tom Rodden, University of Nottingham

Papers
Geraldine Fitzpatrick, Vienna University of Technology
Scott Hudson, Carnegie Mellon University

Best Papers/Notes
Rebecca Grinter, Georgia Institute of Technology

Panels
Alex Taylor, Microsoft Research
Kenton O’Hara, CSIRO ICT Centre

Courses
Regina Bernhaupt, Universität Salzburg
Garett Dworman, Tac-Ed

Special Interest Groups
James Lin, Google
Ido Guy, IBM Research

Media Showcase
Carl F. Disalvo, Georgia Institute of Technology
Jason Freeman, Georgia Institute of Technology
Oscar Murillo, Microsoft
Ed H. Chi, Palo Alto Research Center
Shahram Izadi, Microsoft Research
Anijo Mathew, Illinois Institute of Technology
Scott Pobiner, Parsons The New School for Design

Case Studies
Gitte Lindgaard, Carleton University

Works in Progress
Amy Voids, University of California, Irvine
Stephen Voids, University of California, Irvine

Workshops
Tara Matthews, IBM Research
Jacob O. Wobbrock, University of Washington

Posters
Adam J. Sporka, Czech Technical University in Prague
alt.chi
Daniel Wigdor, Microsoft Surface
Tovi Grossman, Autodesk

Doctoral Consortium
Gilbert Cockton, Northumbria University
Wendy Kellogg, IBM Research

TOCHI Track
Jeffrey Nichols, IBM Research

COMMUNITIES

Design
Anijo Mathew, Illinois Institute of Technology
Scott Pobiner, Parsons The New School for Design

User Experience
Elizabeth Buie, Luminanz Consulting, LLC
Susan Dray, Dray & Associates, Inc.
Keith Instone, IBM
Jhilmil Jain, Hewlett-Packard Laboratories

Engineering
Keith Butler, University of Washington

Management
Jim Nieters, Yahoo
Carola Thompson, SAP

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Yvonne Lopez, Executive Events
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To learn more about our new technologies and opportunities, stop by booth #9, attend our reception at the Ocean Voyages exhibit in the Georgia Aquarium or visit us online at www.google.com/jobs.
Come and celebrate the launch of our new HCI book and chat informally with the authors!

Research Methods
in Human-Computer Interaction

Dr. Jonathan Lazar,
Dr. Jinjuan Heidi Feng
and Dr. Harry Hochheiser
Towson University

Universal praise for this key research textbook!

"The book is superb: comprehensive, clear, and engaging! If you can only buy one HCI methods book, this is the one!"
Dr. Clare-Marie Karat, IBM TJ Watson Research, USA

"An excellent read for practitioners and students alike. It discusses all the must-know theory, provides detailed instructions on how to carry out the research, and offers great examples. I loved it!"
Professor Vanessa Evers, University of Amsterdam, the Netherlands

"A much needed and very useful book, covering important HCI research methods overlooked in standard research methods texts."
Professor Gilbert Cockton, Northumbria University, United Kingdom

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An Invitation

Stop by the Wiley stand, Booth 23, for an opportunity to meet the authors and get a signed copy of the book!

The authors will be on our stand
Monday 6.30pm-7.00pm (Grand Opening),
Tuesday 4pm-4.30pm (break)
and Wednesday 4pm-4.30pm (break)
with champagne and British chocolate provided.
Microsoft
CHI2010 Atlanta

creativity. innovation. impact.

That’s what our user experience community thrives on at Microsoft. Creating products that people love to experience.

booth 7 & 8

Stop by for a latte! And enter to win Microsoft coffee mugs and award-winning hardware, software, and games. Come meet our researchers and designers and pick up your invitation to the reception. Wednesday, April 14, 6:30 to 8:30pm.

take form and function to a higher level.

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ACM SIGCHI

CHI 2010 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 96,000 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 technology and 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 our membership meeting on Wednesday at 18:10 in Centennial 1, 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 2010 OVERVIEW

The CHI 2010 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.

PRE-CONFERENCE | SATURDAY & SUNDAY  
(BY INVITATION ONLY)

Doctoral Consortium

Technology Square Research Building, Rooms 223 and 323  
GVU Center  
Georgia Tech Campus

The Doctoral Consortium provides an opportunity for invited 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 Commons/Grand Hall. Brief descriptions of each poster can also be found in the CHI 2010 Extended Abstracts.

Doctoral Consortium Faculty:

Co-Chair:
Wendy Kellogg, IBM T.J. Watson Research Center, USA  
Gilbert Cockton, Northumbria University, UK

Additional Faculty:
Daniel Fällman, Umeå University, Sweden  
Susan Fussell, Cornell University, USA  
Per Ola Kristensson, Cambridge University, UK  
Marianne Graves Petersen, Århus  
Mary Beth Rosson, Penn State University, USA  
John Thomas, IBM, 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/Grand Hall Lobby on Wednesday.
TECHNICAL PROGRAM | MONDAY — THURSDAY

The CHI technical program includes presentations in multiple formats.

CHOOSING AND ATTENDING SESSIONS

With so many exciting opportunities happening at once, how do you choose? CHI 2010 has put some resources in place to help you make the most of your conference experience:

1. The CHI 2010 Conference Proceedings and Extended Abstracts contain information about each presentation. Additional copies of the proceedings, in both print and digital format, are available for sale at the Registration Desk.
2. Conference volunteers are also available to answer any questions you may have.
3. 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. If you plan to leave during the middle of a session, please be considerate of the speakers and others around you by taking a seat near an exit. Similarly, if you plan to stay for the entire session, please move up to the front and center of the room. Presenters and other attendees will appreciate this.

CHI Madness (25 sec presentations)

At the beginning of each day, presenters give a fast-paced overview of the day’s program.

Human-Computer Interaction Archive

Archival papers and notes document work that makes a lasting and significant contribution to our knowledge and understanding of human-computer interaction.

CHI Papers (30 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 (15 min presentations)

Introduced in 2006, CHI Notes is modeled on the successful UIST TechNotes and CSCW Notes categories. 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)

This year papers from the journal ACM Transactions on Computer-Human Interaction, will be presented orally at CHI. Authors of papers that were published in TOCHI’s 2009 volume 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.

Courses (one to four 90 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 Centennial Foyer on Lower Level 1.

Case Studies (15 or 30 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 in a way to be of interest to and instructive to other members of the community.

Panels (90 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. In addition to standard panels, this year there are also several “paper + invited panel” sessions, which will begin with a 30-minute presentation of a CHI paper on a particularly timely or controversial topic, followed by a 60-minute panel discussion regarding the points raised in the paper.

Special Interest Groups (SIGs) (90 min sessions)

Special Interest Groups (SIGs) enable conference attendees who share similar interests to meet for 90 minutes of 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.

Community Events (presentation length varies)

Community events sessions offer a variety of panels, talks, and presentations from practitioners and researchers at the forefront of their respective communities. Community-oriented panel discussions, SIGs, and invited talks are 90 minutes in length.

MEDIA SHOWCASE AND POSTERS

Media Showcase (interactivity demos, performances and video showcase)

New for CHI 2010 is the Media Showcase venue. Experience human-computer interaction hands-on, in performance, and on video. These presentations push the boundaries of tangible, multimodal, collaborative, creative, and multimedia interfaces. Hands-on demonstrations will be available during the Exhibits Grand Opening at the conference reception on Monday night, and throughout the rest of the week. Music and dance performances will take place on the Media Showcase Stage in the exhibition hall at the conference reception and at 11:30 am on Tuesday, Wednesday, and Thursday. A showcase of videos will be unveiled Tuesday evening and can also be viewed on the Media Showcase stage through the remainder of the week. Performers and demonstrators will also describe their research on scheduled conference panels on Tuesday and Wednesday afternoons. In addition to the works featured in the main exhibition room, there will be select performances and installations in an adjacent gallery room throughout the conference. (Hanover A).

Work-in-Progress (posters)

The Work-in-Progress 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 poster area of Grand Hall, 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 "spotlight on posters" coffee breaks (Tuesday morning for group 1, and Wednesday morning for group 2).

COMPETITIONS

Student Design Competition (posters and 20 min presentations)

This year’s Student Design Competition (SDC) challenge was to design an object, interface, system, or service intended to encourage people to take a walk. Students were asked to use methods of ethnography and contextual research to understand the problem space, and develop user-centered design solutions to support, assist, enhance or otherwise benefit a target audience. The top ten entries were selected from a record number of 91 submissions. The ten finalists were invited to submit a poster detailing their solutions. Students’ work will be displayed in the Poster Area of the Grand Hall. SDC judges will select four finalists to present their work in a special SDC session on Thursday morning. See if you can guess the winners; they will be announced at the closing plenary session on Thursday.

Student Research Competition (posters and 20 min 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 Poster Area in the Grand Hall, and finalists will present their work in a conference session on Thursday morning. Winners will be announced at the closing plenary session.
**SPECIAL EVENTS**

**CONFERENCE RECEPTION & EXHIBITS GRAND OPENING**
The Commons (Grand Hall, Lower Level 2)
Monday, 18:30 – 21:00

To celebrate CHI 2010 we are kicking off the conference with a special opening reception and entertainment event featuring Bioluminescence. Bioluminescence is a performance by R. Luke DuBois and Lesley Flanigan that explores the modality of human voice. The voice has a unique role in our musical culture, bridging the linguistic and the semiotic in a way that transcends instrumentality through a highly personal embodiment of musicianship. DuBois and Flanigan investigate the possibilities of the improvised voice in tandem with electroacoustic processing. The interplay between the two performers (one singing, one processing) engages the metaphor of the voice as impulse and the computer as filter, creating a dense palette of evocative sounds and images derived entirely from the voice of the singer. Using custom software written by DuBois, Flanigan’s voice is restructured live and in real time through spectral processing. While the two performers partake in a “dialogue” of sounds and words, the changing shape of the voice is traced visually through live video, leaving trails that evoke the memory of voice. These visuals act as a sonogram, allowing us to see what is heard in relation to how we are listening.

You will also have a chance to visit our Media Showcase Interactivity Demo presenters. 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**
The Commons (Grand Hall, Lower Level 2)
Tuesday, 18:00 – 20:00

CHI 2010 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.

**CHI Champion Recruiters:**
Google, Inc. (exhibiting)
Microsoft Corp. (exhibiting)
Yahoo! Inc. (exhibiting)

**CHI Contributor Recruiters:**
Autodesk
Bloomberg
IBM Research
Intel
Nokia
SAP

**Other Recruiters:**
FX Palo Alto Laboratory, Inc.

**ACM SIGCHI MEMBER MEETING**
Centennial 1
Wednesday, 18:10 – 19:10

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.

**HOSPITALITY RECEPTIONS AT THE GEORGIA AQUARIUM**
Georgia Aquarium
225 Baker Street NW, Atlanta, GA 30313
Wednesday, 18:30 – 20:30

This year, the open hospitality receptions will be held at the beautiful Georgia Aquarium. Your badge is your ticket to enter the aquarium, so be sure to wear it. In addition to meeting our hosts and networking with old and new colleagues, you can visit all of the fascinating exhibits which will be specially open for our conference attendees.

**CHI Champions:**
Google, Inc.
Microsoft Corp.

**CHI Contributors**
Bloomberg
IBM Research

**Friends of CHI**
Georgia Tech

**Other Hosts**
Carnegie Mellon University
Virginia Tech & University of California Irvine & Penn State
VENUE INFORMATION

INTERNET ACCESS
Wireless internet access throughout the lobby level public space of the Hyatt Regency Atlanta is provided by the hotel and included in your CHI 2010 room rate.

Wireless high-speed internet access for your laptop is being provided in the internet Café Area of the Commons (Grand Hall)by CHI 2010. 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.

REGISTRATION
Hyatt Regency Atlanta, Centennial Ballroom Foyer (Lower Level 1)
The CHI 2010 Registration area is located on Lower Level 1 of the Hyatt Regency, outside the Centennial Ballroom. Pre-registered participants must pick up their badges and conference materials in this area. On-site registration for the conference and courses (subject to space availability) is located here as well.

Registration Hours:
Saturday  7:30 – 12:00
Sunday    7:30 – 17:30
Monday    8:00 – 21:30
Tuesday   8:00 – 17:30
Wednesday 8:00 – 17:30
Thursday  8:00 – 16:30

THE COMMONS
Inside the Grand Hall (Lower Level 2)
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.

Commons Hours:
Monday 18:30 – 21:00 (Opening Reception)
Tuesday 10:30 – 18:00 (Job Fair 18:00 – 20:00)
Wednesday 10:30 – 18:00
Thursday 10:30 – 14:30

COFFEE BREAKS
Regularly scheduled morning and afternoon coffee breaks are complimentary for all registered CHI 2010 delegates. The coffee break schedule is as follows:

Monday
10:30 – 11:30: Grand Hall Foyer, Lower Level 2
16:00 – 16:30: Grand Hall Foyer, Lower Level 2

Tuesday
10:30 – 11:30: Grand Hall (Commons), Lower Level 2
16:00 – 16:30: Grand Hall (Commons), Lower Level 2

Wednesday
10:30 – 11:30: Grand Hall (Commons), Lower Level 2
16:00 – 16:30: Grand Hall (Commons), Lower Level 2

Thursday
10:30 – 11:30: Grand Hall (Commons), Lower Level 2
16:00 – 16:30: Grand Hall Foyer, Lower Level 2

CHI MERCHANDISE
Conference t-shirts, publications, videos and CDs will be available at the Registration Desk outside the Centennial Ballroom. The CHI merchandise desk opens at 12:00 on Monday and will be open during registration hours.

The CHI Information Booth in the Commons is staffed by CHI Local Members and Student Volunteers who can answer your CHI 2010 questions and assist with recruiting and special needs.

CHI INFORMATION BOOTH
The Commons (Grand Hall)
The info booth is staffed by local CHI Members and Student Volunteers who can answer your CHI 2010 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.

CHI Information Booth Hours:
Monday: 18:30 – 21:00
Tuesday 10:30 – 18:00 (Job Fair 18:00 – 20:00)
Wednesday 10:30 – 18:00
Thursday 10:30 – 14:30

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 red t-shirts.
INTERNATIONAL RELATIONS

CHI 2010 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 in the Commons or the registration desk at the earliest time possible. All CHI 2010 meeting space at the Hyatt 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 hotel’s inventory.

RECRUITING BOARDS

The Commons (Grand Hall, Lower Level 2)

Please check the recruiting boards in the Commons for information about career opportunities with exhibiting companies.

For a list of this year’s recruiters refer to page 10.

SPEAKER READY ROOM

Kennesaw Room (Lower 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 Speaker Ready Room. Please sign up early – only one LCD will be available for speaker preparation.

Speaker ready room hours are:
- Sunday: 13:00 – 18:00
- Monday: 7:30 – 18:00
- Tuesday: 7:30 – 18:00
- Wednesday: 7:30 – 18:00
- Thursday: 7:30 – 14:30

MEDIA/PRESS OFFICE

Inman Room (Lower Level 3)

CHI 2010 welcomes members of the media. Please stop by the Media/Press Office to get information on scheduled Media Events this week, and to learn more about CHI 2010, SIGCHI, and future CHI conferences. CHI 2010 media coordinators will be happy to schedule interviews with select authors at the conference. The Media/Press Office will be open at the same hours as Conference Registration.

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### CHI POLICIES

#### CELL PHONE COURTESY

Please be considerate in your cell phone use. CHI 2010 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 2010 name badge serves as your admission pass to conference sessions and events. Please wear your name badge at all times while inside the conference center. Conference management reserves the right to deny admission to any persons not wearing a CHI 2010 name badge.

#### BLOGGING & PHOTOSHARING

CHI encourages conference participants to blog CHI while at the event. Please add the category or keyword “CHI 2010” 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 2010” to your photos. Add “#chi2010” to your tweets to participate in Twitter conversations.

#### ACCOMPANYING PERSONS

CHI 2010 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 2010 is casual.

#### RECORDING PROHIBITED

The use of any type of audio or video recording device is not permitted during any part of the conference. The use of still cameras is permissible. However, reprinting photographs in print or electronic publications is prohibited without the written permission of the people photographed.

#### SMOKING POLICY

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


**ATLANTA, GEORGIA**

The center of industry for the Southern United States, Atlanta is a city of big business. Worldwide brands such Coca-Cola, Turner Media, Delta, and Home Depot call this modern city home. Only in Atlanta can you...

... see the largest fish in the largest Aquarium in the world. The Georgia Aquarium, home to the only whale sharks in North America, is open daily and will also be the site of Wednesday evening's Hospitality events.

... have a “Coke and a Smile” at the brand-new World of Coca-Cola, located next door to the Georgia Aquarium. The Cola-Cola tasting lounge features more than 70 Coke products from around the world.

... race the gold shoes for a gold medal. As host of the 1996 Olympic games, Atlanta continues to commemorate the Olympics in Centennial Olympic Park. Visit this outdoor expanse to see the world’s largest fountain, the Fountain of Rings.

... be a meteorologist and a news anchor in the same day, on the CNN Center tour. Headquarters of Turner Broadcasting Corporation, the Inside CNN studio tour provides a behind-the-scenes look into the famous newsroom.

... visit the world’s busiest airport, which you may have already done on the way into town! Atlanta's Hartsfield-Jackson International Airport services more than 90 million passengers every year.

Atlanta also has a rich cultural heritage; home to esteemed historic figures such as Margaret Mitchell, author of Gone With the Wind, former U.S. President Jimmy Carter, and civil rights leader Martin Luther King, Jr. The Martin Luther King, Jr. National Historic Site and visitors center, located in the Sweet Auburn district, is open daily and features exhibits about King’s life and the civil rights struggle.

For additional information on Atlanta, visit the Hyatt Concierge Desk and look for your Atlanta guide in your conference bag.

**CITY TRANSPORTATION**

Atlanta’s mass transit system, MARTA, provides a convenient ride for $2.00. MARTA’s A to Z Route connects visitors with the Georgia Aquarium and Zoo Atlanta. The Peach, or MARTA Route 110, travels from Lenox Square to the Georgia State Capitol with stops at popular locations. The closest MARTA station is located right inside the attached Peachtree Center Mall.

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**ELECTRICAL POWER**

It is ACM SIGCHI policy to use the local power source. Electrical outlets in the USA are 120 volts. If you are traveling from outside the USA, you will need an adapter to use your small appliances, if they are designed for a different standard. CHI 2010 does not provide power converters, extension cords, power strips or other electric accessories.

**SERVICES**

**ATMS**

Two ATMs are located in the hotel lobby, one near the front desk and one near the bar.

**SHOPPING & DINING**

The Hyatt Regency Atlanta is directly connected to the Mall at Peachtree Center, a three-level indoor plaza with over 60 specialty shops, including six full-scale restaurants and two food courts with 18 quick-dining outlets. Visit the Hyatt Concierge Desk for additional information.

**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 the Fairlie Room on Lower Level 3) immediately for assistance. The Hyatt Security Department will respond to all emergencies inside the building. Dial the Hotel Emergency Line (x55) from any house phone.

**LOST & FOUND**

Please turn all lost and found items in to the Registration Desk. CHI 2010 management will then turn lost and found items over to building security at the conclusion of the conference.

**BUSINESS & OTHER SERVICES**

There is a FedEx Office business center located in the main lobby of the hotel.

<table>
<thead>
<tr>
<th>Day</th>
<th>Hours</th>
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<tbody>
<tr>
<td>Monday-Friday</td>
<td>07:00 - 19:00</td>
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<tr>
<td>Saturday</td>
<td>09:00 - 17:00</td>
</tr>
<tr>
<td>Sunday</td>
<td>09:00 - 13:00</td>
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</tbody>
</table>

FedEx self-service is open twenty-four hours every day with your hotel room key.

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

The CHI Academy is an honorary group of individuals who have made extensive contributions to the 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:

- **Susanne Bødker**
  Susanne Bødker is a Professor of Computer Science at Aarhus University in Denmark. She employed Activity Theory in her dissertation research, published as the book "Through the Interface" in 1990, and contributed to the broad post-cognitive rethinking of theory in HCI. She helped to establish CSCW as a research area. She has developed and practiced participatory design methods in a wide variety of user domains from work safety inspection to public administration. Her current work is developing activity theoretical approaches to ubiquitous technologies, social navigation, and community technology.

- **Mary Czerwinski**
  Mary Czerwinski is the Research Area Manager of the Visualization and Interaction Group at Microsoft Research. Mary’s research focuses on designing novel information visualization and interaction techniques for a wide variety of devices, display sizes, and applications. Much of Mary’s work focuses on improved designs for managing interruptions, multitasking and group awareness. Prior to joining Microsoft Research, Mary managed the usability group in the interactive media division of Microsoft and previously led user research groups at Compaq and Johnson Space Center. Mary has been an affiliate member of the Psychology Departments at the University of Washington and Rice University, and sits on several academic and professional advisory boards. Mary is a distinguished scientist of the ACM. She has served on the ACM SIGCHI Executive Committee since 2001, and as conference chair for UIST 2005 and co-chair for CHI 2008.

- **Austin Henderson**
  Austin Henderson’s 45-year career in Human-Computer Interaction includes user interface research and architecture at MIT’s Lincoln Laboratory, Bolt Beranek and Newman, Xerox Research (both PARC and EuroPARC), Apple Computer, and Pitney Bowes, as well as strategic industrial design with Fitch and his own Rivendel Consulting & Design. Austin has built both commercial and research applications in many domains including manufacturing, programming languages, air traffic control, electronic mail (Hermes), user interface design tools (Trillium), workspace management (Rooms, Buttons), distributed collaboration (MediaSpace), and user-evolvable systems (Tailorable – “design continued in use”, Plant – “designing for the unanticipated”). These applications, and their development with users, have grounded his analytical work, which has included the nature of computation-based socio-technical systems, the interaction of people with the technology in those systems, and the practices and tools of their development. The primary goals of his work has been to better meet user needs, both by improving system development to better anticipate those needs, and by improving system capability to enable users themselves to better respond to unanticipated needs when they arise in a rich and changing world.

- **David Kieras**
  David is Professor of Electrical Engineering and Computer Science at the University of Michigan who has been an outstanding researcher, teacher, and mentor in areas that span many theoretical and applied aspects of HCI principles and methods. His most prominent contributions to HCI have come in the form of computational models of human performance, starting with his work with Peter Polson on the Cognitive Complexity Theory, epitomized by the classic 1985 International Journal of Man-Machine Studies paper, which provided a seminal application of production systems to produce quantitative accounts of performance time and knowledge transfer from one interface task to another. Viewing production systems as an implementation of GOMS models, he developed NGOMS as a practical predictive notation for GOMS models. With Scott Wood, he created the GLEAN system for computational simulations of GOMS models, and with Ruven Brooks he developed an approach to task analysis and the design of functionality based on higher-level GOMS models. With David Meyer, he developed the EPIC cognitive architecture to integrate perceptual, motor, and cognitive performance, pioneering the rigorous application of cognitive architectures to the fine-grain modeling of multimodal user interaction and multitasking performance.

- **Aaron Marcus**
  Arnie Lund is a Director of User Experience (UX) at Microsoft, and has also managed UX teams at AT&T Bell Labs, Ameritech, US West Advanced Technologies and Sapient. He is known for his work in research and practice, and his success as a manager driving research into practice. He has 20+ patents and has published widely. He has co-chaired two CHI conferences, and has been an active “bridge” between SIGCHI and HFES where he is a Fellow and chaired the HFES Institute that created the first HCI ANSI Standard. He has funded and collaborated on research at a variety of universities and other research institutions. He and his teams have driven product innovations in areas such as interactive television, natural user interfaces, CSCW, media convergence, and in the software innovation and design process itself. Arnie has consistently contributed both through his thought leadership and through his ability to lead to further the impact of HCI.
Larry Tesler

Larry is a user experience consultant who has played a leading role in the development of today’s ‘desktop’ user interface. In 1973, after working at Stanford on the PUB document compiler, he moved to Xerox PARC to work on publishing software. He identified and publicized the need to eradicate unnecessary modes from user interfaces, to the extent that this is now standard design practice. At PARC he pioneered the use of formative usability studies, and was closely involved in the invention of a number of now-familiar interaction techniques. These included cut-and-paste editing, click-and-type text entry, dialogue boxes for search and replace, between-character text insertion points, drop-down menus and paned-window browsing. At Apple during the 1980s and 1990s, Larry managed groups doing user experience design innovation, including the Advanced Technology Group and the Lisa office suite team. Subsequently he worked as Vice President for User Experience at both Amazon and Yahoo, before turning to independent consulting.

Shumin Zhai

Shumin Zhai is a Research Staff Member at the IBM Almaden Research Center. Shumin is a leading researcher in applying quantitative and engineering methods in HCI, and has made fundamental contributions to text entry optimization, physical input device design, eye-tracking interfaces, and the understanding of human performance. His contributions to text entry techniques for mobile and touch screen devices include the ShapeWriter gesture keyboard which has been commercialized. Shumin has also been a visiting professor at universities in Europe and China. He has served on many editorial boards and conference committees and is currently the Editor-in-Chief of ACM Transactions on Computer-Human Interaction.

Congratulations to this year’s Academy.

CHI LIFETIME RESEARCH AWARD

The CHI Lifetime Research Award is presented to individuals for outstanding contributions to the study of human-computer interaction. This award recognizes the very best, most fundamental and influential research contributions. It is awarded for a lifetime of innovation and leadership. The criteria for the award are cumulative contributions to the field, influence on the work of others, and development of new research directions.

This year we present the CHI Lifetime Research Award to Lucy Suchman.

Lucy Suchman

Lucy Suchman is Professor of Anthropology of Science and Technology in the Department of Sociology at Lancaster University. Before coming to Lancaster, she held the positions of Principal Scientist and manager of the Work Practice and Technology area at Xerox’s Palo Alto Research Center. Lucy is well known for having challenged common assumptions behind the design of interactive systems with a cogent anthropological argument that human action is constantly constructed and reconstructed from dynamic interactions with the material and social worlds. She recently published an updated and expanded version of her classic book: Human-Machine Reconfigurations: Plans and Situated Actions (Cambridge University Press, 2007).

LIFETIME SERVICE AWARD

The CHI Lifetime Service Award goes to individuals who have contributed to the growth of SIGCHI in a variety of capacities. This award is for extended services to the community at large over a number of years. Criteria for this award are: Service to SIGCHI and its activities in a variety of capacities; extended contributions over many years; influence on the community at large.

Mary Czerwinski

Mary Czerwinski is the Research Area Manager of the Visualization and Interaction Group at Microsoft Research, and is a distinguished scientist of the ACM. She has a long record of exemplary service to the HCI community, serving in many roles on the committee for various SIGCHI-sponsored conferences, notably CHI and UIST. She also has taken on key leadership roles: CHI 2000 Papers co-chair, CHI 2008 Conference co-chair, UIST 2005 Conference co-chair, and UIST 2010 Papers co-chair. She also served on the SIGCHI Executive Committee from 2001 to 2009, including two consecutive terms as Executive Vice President.
CHI 2010 Awards

### CHI LIFETIME PRACTICE AWARD

The CHI Lifetime Practice Award is presented to individuals for outstanding contributions to the practice and understanding of human-computer interaction. This award recognizes the very best and most influential applications of human-computer interaction. It is awarded for a lifetime of innovation and leadership. The criteria for the award are cumulative contributions to the field directly and through the leadership of others; innovation and the stimulation of innovation through practice; impact on the field, industry, and society; influence on the work of others, and the growth of other HCI practitioners and researchers; and successful application of human-computer interaction to products, services, and systems.

**Karen Holtzblatt**

Recognized as a leader in the design community, Karen Holtzblatt has pioneered transformative ideas and design approaches throughout her career. At Digital Equipment Corporation, Karen introduced Contextual Inquiry — the industry standard for gathering field data to understand how technology impacts the way people work. Contextual Inquiry and Contextual Design, the team-based design processes based on it, provide a revolutionary approach for designing new products and systems based on a deep understanding of the context of use. Karen co-founded InContext Enterprises in 1992 to provide Contextual Design services. Their coaching and cross-company design teams deliver field data and solutions to businesses across multiple industries. The books, Contextual Design: Defining Customer Centered Systems, and Rapid Contextual Design, are used by companies and universities all over the world. Karen’s extensive experience with teams and all types of work and life practice underlies the innovation and reliable quality consistently delivered by InContext’s teams. Karen also has more than 20 years of teaching experience, professionally and in university settings.

### SOCIAL IMPACT AWARD

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

**Allison Druin**

Allison Druin is Associate Professor in the College of Information Studies at the University of Maryland and Director of the Human-Computer Interaction Lab. Prof. Druin is a pioneer in the development of technology for children and the inclusion of children as partners in the design process. Her technology co-design methods have been reported on through scholarly publications, presentations, and books, and have become widely used throughout the CHI community. She founded the CHIKids program for the CHI Conference. This program enabled many CHI community members who were parents to participate in the conference while their children learned about CHI and contributed to the experience of the conference, e.g., by producing daily newsletters, websites, and plenary session videos. With her collaborator, Prof. Ben Bederson, she created the International Children’s Digital Library, a multilingual free digital library of children’s books, currently consisting of over 4,000 books in over 50 languages, with more than three million users from over 160 countries worldwide.

**Ben Bederson**

Ben Bederson is Associate Professor of Computer Science at the University of Maryland and past Director of the Human-Computer Interaction Laboratory there. With his collaborator, Prof. Allison Druin, he led the development of many of the key technologies designed for and by kids, including KidPad and StoryKit for iPhone. He is the Technical Project Director for the International Children’s Digital Library, a multilingual free digital library of children’s books, currently consisting of over 4,000 books in over 50 languages, with more than three million users from over 160 countries worldwide. He led the library’s collaboration with the Government of Mongolia— bringing access to the library in rural Mongolia. Prof. Bederson also did influential studies of the usability of electronic voting systems, which resulted in scholarly publications, reports aimed at policy makers, and books directed to the general public. This work has served to highlight the challenges in developing usable electronic voting systems and has informed decisions on voting technology adoption.
PAST HONOREES

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

SIGCHI Lifetime Service Award
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
2001 Austin Henderson

SIGCHI Social Impact Award
2009 Vicki Hanson
2008 Gregory Abowd, Gary Marsden
2007 Ted Henter
2006 Gregg Vanderheiden

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. Congratulations to award winners and nominees for their outstanding contributions to CHI 2010 and to our field.

SIGCHI BEST OF CHI 2010 COMMITTEE:
Paul M. Aoki, Intel Research, Berkeley
Steve Benford, University of Nottingham
Paul Dourish, University of California, Irvine
Thomas A. Finholt, University of Michigan
Jodi Forlizzi, Carnegie Mellon University
Rebecca E. Grinter (chair), Georgia Institute of Technology

CHI 2010 BEST PAPERS, AWARDED BY SIGCHI

How does search behavior change as search becomes more difficult? (page 25)
Anne Aula, Rehan M. Khan, Zhiwei Guan, Google, USA

The Tower of Babel Meets Web 2.0: User-Generated Content and its Applications in a Multilingual Context (page 27)
Brent Hecht, Northwestern University, USA

Occlusion-Aware Interfaces (page 28)
Daniel Vogel, University of Toronto, Mount Allison University, Canada

Ravin Balakrishnan, University of Toronto, Canada

Skinput: Appropriating the Body as an Input Surface (page 36)
Chris Harrison, Carnegie Mellon University, USA

Desney Tan, Dan Morris, Microsoft Research, USA

Avaaj Otalo | A Field Study of an Interactive Voice Forum for Small Farmers in Rural India (page 36)
Neil Patel, Stanford University, USA
Deepthi Chittamuru, University of California at Berkeley, USA

Anupam Jain, IBM India Research Laboratory, India
Paresh Dave, Development Support Center, India
Tapan S. Parikh, University of California at Berkeley, USA
Social Tagging Revamped: Supporting the Users’ Need of Self-promotion through Social Filtering (page 39)  
Mauro Cherubini, Telefónica Research, Spain  
Alejandro Gutierrez, University of Illinois at Urbana-Champaign, USA  
Rodrigo de Oliveira, Nuria Oliver, Telefónica Research, Spain  

MOSES: Exploring New Ground in Media and Post-Conflict Reconciliation (page 43)  
Thomas N. Smyth, John Etherton, Michael L. Best, Georgia Institute of Technology, USA  

Blogging in a Region of Violent Conflict: Supporting Transition to Recovery (page 43)  
Ban Al-Ani, Gloria Mark, Bryan Semaan, University of California, at Irvine, USA  

PointAssist for Older Adults: Analyzing Sub-Movement Characterization to Aid in Pointing Tasks (page 44)  
Juan Pablo Hourcade, Christopher M. Nguyen, Keith B. Perry, Natalie L. Denburg, University of Iowa, USA  

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David Ahlström, Klagenfurt University, Austria  
Andy Cockburn, University of Canterbury, New Zealand  
Carl Gutwin, University of Saskatchewan, Canada  
Pourang Irani, University of Manitoba, Canada  

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Joe Tullio, Motorola, Inc., USA  
Elaine Huang, University of Calgary, Canada  
David Wheatley, Harry Zhang, Claudia Guerrero, Motorola, Inc., USA  
Amruta Tamdoo, University of Illinois, Chicago, USA  

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Tovi Grossman, George Fitzmaurice, Autodesk Research, Canada  

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Andrew Besmer, Heather Richter Lipford, University of North Carolina at Charlotte, USA  

Expressive Robots in Education (page 55)  
Martin Saerbeck, Eindhoven University of Technology, Netherlands  
Tom Schut, Philips Research, Netherlands  
Christoph Bartneck, Eindhoven University of Technology, Netherlands  
Maddy D. Janse, Philips Research, Netherlands  

Exploring Affective Technologies for the Classroom with the Subtle Stone (page 55)  
Madeline Balam, University of Sussex, UK  
Geraldine Fitzpatrick, Vienna University of Technology, Austria  
Judith Good, University of Sussex, UK  
Rosemary Luckin, London Knowledge Lab, UK  

How Power Users Help and Hinder Open Bug Reporting (page 55)  
Andrew J. Ko, Parmit K. Chilana, University of Washington, USA  

Clutching at Straws: Using Tangible Interaction to Provide Non-Visual Access to Graphs (page 56)  
David McGookin, Euan Robertson, Stephen Brewster, University of Glasgow, UK  

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Thomas Erickson, IBM, USA  
Loren Terveen, University of Minnesota, USA  

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Xiaojuan Ma, Christiane Fellbaum, Perry Cook, Princeton University, USA  

OneBusAway: Results from Providing Real-Time Arrival Information for Public Transit (page 60)  
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A Death in the Family: Opportunities for Designing Technologies for the Bereaved (page 60)  
Michael Massimi, Ronald M. Baecker, University of Toronto, Canada  

Passing On & Putting To Rest: Understanding Bereavement in the Context of Interactive Technologies (page 61)  
William Odom, Carnegie Mellon University, USA  
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David Kirk, University of Nottingham, UK  
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Fear and the City - Role of Mobile Services in Harnessing Safety and Security in Urban Use Contexts (page 61)  
Jan Blom, Nokia Research Center, Lausanne, Switzerland  
Divya Viswanathan, Nokia Research Center, Bangalore, India  
Janet Go, Mirjana Spasojevic, Nokia Research Center, Palo Alto, USA  
Karthikeya Acharya, Robert Ahonius, Nokia Research Center, Bangalore, India  

The Prayer Companion: Openness and Specificity, Materiality and Spirituality (page 63)  
William Gaver, Goldsmiths, University of London, UK  
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Andy Boucher, Goldsmiths, University of London, UK  
Nadine Jarvis, John Bowers, Goldsmiths, University of London, UK  
Peter Wright, Sheffield Hallam University, UK  

What’s Your Idea? A Case Study of a Grassroots Innovation Pipeline within a Large Software Company (page 63)  
Brian Bailey, Department of Computer Science, University of Illinois and Microsoft Research, USA  
Eric Horvitz, Microsoft Research, USA  

Knowing Where and When to Look in a Time-Critical Multimodal Dual Task (page 64)  
Anthony J. Hornof, Yunfeng Zhang, Tim Halverson, University of Oregon, USA
CHI 2010 Awards

Designing Patient-Centric Information Displays for Hospitals (page 64)
Lauren Wilcox, Columbia University, USA
Dan Morris, Desney Tan, Microsoft Research, USA
Justin Gatewood, Washington Hospital Center, USA

Designing a Technological Playground: A Field Study of the Emergence of Play in Household Messaging (page 71)
Siân E. Lindley, Richard Harper, Abigail Sellen, Microsoft Research Cambridge, UK

The Family Window: The Design and Evaluation of a Domestic Media Space (page 71)
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Carman Neustaedter, Andrew F. Kurtz, Kodak Research Labs, USA

LensMouse: Augmenting the Mouse with an Interactive Touch Display (page 72)
Xing Dong Yang, University of Alberta, Canada
Edward Mak, David McCallum, Pourang Irani, University of Manitoba, Canada
Xiang Cao, Shahram Izadi, Microsoft Research Cambridge, UK

MouseLight: Bimanual Interaction on Digital Paper using a Pen and a Spatially-Aware Mobile Projector (page 72)
Hyunyoung Song, University of Maryland, College Park, USA
Francois Guimbretiere, Cornell University, USA
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Shwetak N. Patel, Sidhant Gupta, University of Washington, USA
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Code Bubbles: A Working Set-based Interface for Code Understanding and Maintenance (page 73)
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Christopher Coleman, Ferdi Adeputra, Brown University, USA
Joseph J. LaViola Jr., University of Central Florida, USA

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David R. Flatla, Carl Gutwin, University of Saskatchewan, Canada

Intermediated Technology Use in Developing Communities (page 76)
Nithya Sambasivan, University of California at Irvine, USA
Ed Cutrell, Microsoft Research India, India
Kentaro Toyama, University of California at Berkeley, USA
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Note | A Longitudinal Study of How Highlighting Web Content Change Affects People's Web Interactions (page 46)
Jaime Teevan, Susan T. Dumais, Daniel J. Liebling, Microsoft Research, USA

Note | Social Network Activity and Social Well-Being (page 58)
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Cameron Marlow, Thomas Lento, Facebook, USA

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Investigating Narrative Structure in Mobile Games for Seniors (page 35)
Sharon Lynn Chu Yew Yee, Henry Been-Lirn Duh, National University of Singapore, Singapore
Francis Quek, Virginia Polytechnic Institute and State University, USA

Fitting an Activity-Centric System into an Ecology of Workplace Tools (page 36)
Aruna Balakrishnan, Carnegie Mellon University, USA
Tara Matthews, Thomas Moran, IBM Research USA

Faster Progress Bars: Manipulating Perceived Duration with Visual Augmentations (page 51)
Chris Harrison, Zhiquan Yeo, Scott E. Hudson, Human-Computer Interaction Institute, Carnegie Mellon University, USA

Improving Social Game Engagement on Facebook through Enhanced Socio-Contextual Information (page 54)
Ben Kirman, Shaun Lawson, Conor Linehan, University of Lincoln, UK
Francesco Martino, Luciano Gamberini, University of Padova, Italy
Andrea Gaggioli, Istituto Auxologico Italiano, Italy

Minput: Enabling Interaction on Small Mobile Devices with High-Precision, Low-Cost, Multipoint Optical Tracking (page 57x)
Chris Harrison, Scott E. Hudson, Human-Computer Interaction Institute, Carnegie Mellon University, USA
PRECONFERENCE WORKSHOPS

W1 | BELIV’10 - Beyond time and Errors: novel evaluation methods for Information Visualization
Enrico Bertini, University of Fribourg, Switzerland
Heidi Lam, Google Inc., USA
Adam Perer, IBM Haifa Research Lab, Israel

W2 | Whole Body Interaction 2010
David England, Liverpool John Moores University, UK
Jennifer Sheridan, London Knowledge Lab, UK
Beth Crane, University of Michigan, USA

W3 | Bridging the Gap: Moving From Contextual Analysis to Design
Tejinder Judge, Virginia Tech, USA
Carman Neustaedter, Kodak Research Labs, USA
Anthony Tang, University of British Columbia, Canada
Steve Harrison, Virginia Tech, USA

W4 | Context-Adaptive Interaction for Collaborative Work
Jürgen Ziegler, University of Duisburg-Essen, Germany
Jörg Haake, Fern Universität in Hagen, Germany
Stephan Lukosch, Delft University of Technology, the Netherlands
Volkmar Pipek, University of Siegen, Germany

W5 | Critical Dialogue: Interaction, Experience and Cultural Theory
Mark Blythe, University of York, UK
John McCarthy, University College Cork, UK
Ann Light, Sheffield Hallam University, UK
Shaowen Bardzell, Indiana University, USA
Peter Wright, Sheffield Hallam University, UK
Jeffrey Bardzell, Indiana University, USA
Alan Blackwell, University of Cambridge, UK

W6 | Design to read: Designing for people who do not read easily
Caroline Jarrett, Effortmark Ltd, UK
Helen Petrie, University of York, UK
Kathryn Summers, University of Baltimore, USA

W7 | HCI at the End of Life: Understanding Death, Dying, and the Digital
Michael Massimi, University of Toronto, Canada
Will Odom, Carnegie Mellon University, Canada
David Kirk, University of Nottingham, UK
Richard Banks, Microsoft Research, Cambridge, USA

W8 | Know Thyself: Monitoring and Reflecting on Facets of One’s Life
Ian Li, Jodi Forlizzi, Anind Dey, Carnegie Mellon University, USA

W9 | Model-Driven Development of Advanced User Interfaces
Jan Van den Bergh, Hasselt University - iBBT, Belgium
Gerrit Meixner, DFKI, Germany
Kai Breiner, University of Kaiserslautern, Germany
Andreas Pleuss, Lero, Ireland
Stefan Sauer, University of Paderborn, Germany
Heinrich Hussmann, University of Munich, Germany

W10 | Models, theories and methods of studying online behavior
Barry Brown, University of California, San Diego, USA
Cliff Lampe, Michigan State University, USA
Kerry Rodden, Google, USA
Nicolas Ducheneaut, Palo Alto Research Center, USA

W11 | Natural User Interfaces: the prospect and challenge of touch and gestural computing
Dennis Wixon, Steven Seow, Andy Wilson, Microsoft Corporation, USA
Ann Morrison, Giulio Jacucci, Helsinki Institute for Information Technology, Finland

W12 | Senior-Friendly Technologies: Interaction Design for the Elderly
Henry Been-Lirn Duh, Interactive and Digital Media Institute National University of Singapore, Singapore
Ellen Yi-Luen Do, GVU center College of Architecture & School of Interactive Computing Georgia Institute of Technology, USA
Mark Billinghurst, HIT Lab New Zealand University of Canterbury, New Zealand
Francis Quek, Center for Human-Computer Interaction and Department of Computer Science Virginia Tech, USA
Vivian Hsueh-Hua Chen, Wee Kim Wee School of Communication and Information Nanyang Technological University, Singapore

W13 | Video Games as Research Instruments
Eduardo Calvillo Gamez, Universidad Politécnica de San Luis Potosí, Mexico
Jeremy Gow, Imperial College London, UK
Paul Cairns, University of York, UK
Jonathan Back, Eddie Capstick, University College London, UK

W14 | Wellness Informatics: Towards a Definition and Grand Challenges
Rebecca E. Grinter, School of Interactive Computing, Georgia Institute of Technology, USA
Katie A. Siek, Department of Computer Science, University of Colorado at Boulder, USA
Andrea Grimes, School of Interactive Computing, Georgia Institute of Technology, USA

W15 | Artifacts in Design: Representation, Ideation, and Process
D. Scott McCrickard, Virginia Tech, USA
Michael E. Atwood, Drexel University, USA
Gayle Curtis, Stanford University, USA
Steve Harrison, Virginia Tech, USA
Jon Kolko, frog design, USA
Erik Stolterman, Indiana University at Bloomington, USA
Shahtab Wahid, Virginia Tech, USA
W16 | Brain, Body and Bytes: Psychophysiological User Interaction
Audrey Girouard, Erin Treacy Solovey, Tufts University, USA
Regan Mandryk, University of Saskatchewan, Canada

W17 | Cognitive Models of User Behavior in Social Information Systems
Wai-Tat Fu, University of Illinois at Urbana-Champaign, USA
Thomas Kannampallil, Penn State University, USA
Desney Tan, Microsoft Research, USA
Lennart Nacke, Blekinge Institute of Technology, Sweden
Robert J.K. Jacob, Tufts University, USA

W18 | Designing and Evaluating Affective Aspects of Sociable Media to Support Social Connectedness
Thomas Visser, Delft University of Technology, the Netherlands
Daan van Bel, Eindhoven University of Technology, the Netherlands
Pavan Dadlani, Philips Research, the Netherlands
Svetlana Yarosh, Georgia Institute of Technology, USA

W19 | SkCHI: Designing Sketch Recognition Interfaces
Tracy Hammond, Texas A&M University, USA
Edward Lank, University of Waterloo, Canada
Aaron Adler, BBN, USA

W20 | Examining Appropriation, Re-use, and Maintenance for Sustainability
Jina Huh, University of Michigan, USA
Eli Blevis, Indiana University, USA
Bill Tomlinson, University of California, Irvine, USA
Phoebe Sengers, Cornell University, USA
Lisa P. Nathan, University of British Columbia, Canada
Daniela Busse, SAP Labs, Inc, USA
Six Silberman, University of California, Irvine, USA

W21 | Microblogging: What and How Can We Learn From It?
Julia Grace, IBM Almaden Research, USA
Dejin Zhao, Information Sciences & Technology Pennsylvania State University, USA
danah boyd, Microsoft Research New England, USA

W22 | Next Generation of HCI and Education: Workshop on UI Technologies and Educational Pedagogy
Edward Tse, SMART Technologies, Canada
Johannes Schöning, DFKI GmbH, Germany
Yvonne Rogers, The Open University, UK
Chia Shen, SDR Lab, USA
Gerald Morrison, SMART Technologies, Canada

W23 | Researcher-Practitioner Interaction
Elizabeth Buie, Luminanz Consulting, LLC, USA
Susan Dray, Dray & Associates, Inc., USA
Keith Instone, IBM, USA
Jhilmil Jain, HP, USA
Gitte Lindgaard, Carleton University, Canada
Arnie Lund, Microsoft, USA

W24 | The Future of FLOSS in CHI Research and Practice
Paula M. Bach, The Pennsylvania State University, USA
Michael Terry, University of Waterloo, Canada
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**Commons/Grand Hall**
- **Conference Reception & Exhibits Grand Opening**
  - 18:30–21:00
- **Media Showcase Interactivity Demos**
  - 18:30–21:00
- **Additional Interactivity Demo in Hanover A**

**Special Events**
- **Media Showcase Performance**
  - 11:30–13:00
  - Hanover A
- **Media Showcase Performance**
  - 18:30–21:00
  - Commons
OPENING PLENARY – CENTENNIAL 1-3

MESSY FUTURES: CULTURE, TECHNOLOGY AND RESEARCH
Genevieve Bell, PhD
Intel Corporation
Intel Fellow, Digital Home Group
Director, User Experience Group

In 1998, Americans represented nearly three-quarters of the world’s internet users, today, they are less than 15%. The complexion of the web – its users, their desires, their languages, points of entry and experiences – has subtly and not so subtly changed over that period. All these new online participants bring with them potential different conceptual models of information, knowledge and knowledge systems with profound consequences for the ideological basis of the net. These new participants also operate within different regulatory and legislative regimes which will bring markedly different ideas about how to shape what happens online. And in this same time period, the internet itself has become feral, appearing as a data source, connectivity backbone or content stream for mobile devices, cell phones, connected consumer electronics, gaming consoles, personal health devices, smart electrical meters and city-scapes. Devices have proliferated with device ensembles and debris collecting in the bottom of backpacks, on the dashboards of dusty trucks and in drawers, cabinets and baskets. Convergence didn’t really happen the way it was anticipated and not everyone got online, got connected or having been connected, stayed connected. And the paperless office and the cashless society, well they ran up against the stubborn materiality of paper in its many guises, and e-government proved even more complicated than just regular government. And that was just the last ten years.

Over the next decade, the technologies, systems and experiences we imagine, build, critique and resist will have even more complex trajectories. They will circulate in even wider networks – of people, institutions, cultures, places, memories and ideologies. If we start with the premise of “messy futures,” what does that means for us as a community of scholars, researchers and builders? What will it mean for the projects we undertake, their locations, intellectual agendas and outputs? In this talk, I want to explore about what happens if we accept that the future is neither singular, nor stable.

CHI MADNESS | CENTENNIAL 2

10:00-10:30
SESSIONS CHAIRS:
Mira Dontcheva, Adobe Systems
Matt Jones, Swansea University
Max L. Wilson, Swansea University

Confused about what to do next? Too many options for you to choose from? We end this session with CHI Madness. CHI Madness, now in its fifth year, returns to give everyone a lightning speed overview of the day’s program. In 25 seconds or less the presenters in many of today’s sessions will tell you what’s exciting about their presentation. It’s fast-paced; it’s fun; sometimes it’s even funny.

Born and raised in Australia, today Dr. Genevieve Bell is the Director of the User Experience Group within Intel Corporation’s Digital Home Group in Portland, Oregon. She is the driving force behind Intel’s emerging consumer centred focus. Gathering a team of anthropologists, interaction designers and human factors engineers to transform consumer-centric product innovation, she has fundamentally changed how Intel envisions, plans and develops its platforms. Her team is responsible for setting research directions, conducting global comparative qualitative and quantitative research, leading new product strategy and definition and championing consumer-centric innovation and thinking in Intel’s Consumer Electronics business and across all of Intel’s platforms. Dr. Bell has a PhD in anthropology from Stanford University and a new book forthcoming from MIT Press. She was recently recognized by Fast Company magazine as one of the 100 most innovative people in business.
PAPERS | CENTENNIAL 1

ORGANIZATIONS AND COMMUNITIES
SESSION CHAIR: Amy Bruckman, Georgia Tech

PAPER | Across Boundaries of Influence and Accountability: The Multiple Scales of Public Sector Information Systems
Christopher A. Le Dantec, W. Keith Edwards, Georgia Institute of Technology, USA

We present findings from a year-long ethnographic investigation of ICT use within nonprofit agencies. Our work demonstrates the unique challenges facing systems used across different scales of influence and accountability.

PAPER | A Case Study of Micro-blogging in the Enterprise: Use, Value, and Related Issues
Jun Zhang, Pitney Bowes, USA
Yan Qu, University of Maryland, USA
Jane Cody, Yuling Wu, Pitney Bowes, USA

Case study of Yammer use in a large corporate environment using rich empirical data. Provided comprehensive understanding of use, value and limitations of micro-blogging in the enterprise.

PAPER | Student Socialization in the Age of Facebook
Louise Barkhuus, Juliana Tashiro, University of California, San Diego, USA

Presents a study of student use of Facebook for offline socialization, comparing mobile, semi-mobile and non-mobile use of Facebook.

PANEL | CENTENNIAL 2

ADDRESSING CHALLENGES IN DOING INTERNATIONAL FIELD RESEARCH

PANELISTS:
Elizabeth Churchill, Yahoo! Research, USA
Susan Dray, Dray & Associates, Inc., USA
Ame Elliot, IDEO, USA
Patrick Larvie, Google, USA
David Siegel, Dray & Associates, Inc., USA

Panel discussing some key challenges in international field research. Will help attendees better understand and avoid pitfalls and manage challenges.

PAPERS | CENTENNIAL 3

MULTITASKING
SESSION CHAIR: Mary Czerwinski, Microsoft Research

NOTE | Multitasking and Monotasking: The Effects of Mental Workload on Deferred Task Interruptions
Dario D. Salvucci, Peter Bogunovich, Drexel University, USA

Describes an experiment investigating whether users defer interruptions to points of lower workload. Augments our understanding of how users manage interruptions in multitask environments.

NOTE | On Reconstruction of Task Context after Interruption
Dario D. Salvucci, Drexel University, USA

Provides a theoretical analysis of the process by which users reconstruct task knowledge after an interruption. Augments our understanding of how users recover from interruptions in multitask environments.

PAPER | Evaluating Cues for Resuming Interrupted Programming Tasks
Chris Parnin, Georgia Institute of Technology, USA
Robert DeLine, Microsoft Research, USA

Survey and experiment evaluating written notes and visual cues as resumption aids for interrupted programming tasks. Can inform designers in facilitating developer communication with team-mates and enhance note-taking.

PAPER | Multitasking Bar: Prototype and Evaluation of Introducing the Task Concept into a Browser
Qing Wang, Huiyou Chang, Sun Yat-Sen University, China

Describes a browser plugin for helping users in their multitasking while working on the Web. It helps users to manage Web pages related to a task as a whole bundle.

PAPERS | CENTENNIAL 4

EXPLORATORY SEARCH
SESSION CHAIR: Gene Golovchinsky, FXPAL

PAPER | Reactive Information Foraging for Evolving Goals
Joseph Lawrance, Oregon State University & Massachusetts Institute of Technology, USA
Margaret Burnett, Oregon State University, USA
Rachel Bellamy, IBM Research, USA
Christopher Bogart, Oregon State University, USA
Calvin Swart, IBM Research, USA

We present PFIS2, a reactive model of information foraging in which the goals change. A seven-month field study demonstrated that the model predicted remarkably well where programmers navigated.
PAPER | How Does Search Behavior Change as Search Becomes More Difficult?
Anne Aula, Rehan M. Khan, Zhiwei Guan, Google, USA
Lab and online study (200+ users) showed that behavioral signals available in search logs can distinguish users engaged in hard and easy tasks.

PAPER | Effects of Popularity and Quality on the Usage of Query Suggestions During Information Search
Diane Kelly, Amber Cushing, Maureen Dostert, Xi Niu, Karl Gyllstrom, University of North Carolina, USA
Experiment shows that people can distinguish between the query suggestion quality and are not influenced by past usage. Useful to those interested in designing social search systems and understanding behavior.

PAPERS | REGENCY 5
SOCIAL SUPPORT FOR CANCER PATIENTS
SESSION CHAIR: Mark Newman, University of Michigan

PAPER | Catalyzing Social Support for Breast Cancer Patients
Meredith M. Skeels, Kenton T. Unruh, Christopher Powell, Wanda Pratt, University of Washington, USA
Social support is a critical yet underutilized resource for cancer patients. We collaborated with breast cancer patients on the design of social networking software to catalyze and support helping activities.

PAPER | Transforming Clinic Environments into Information Workspaces for Patients
Kenton T. Unruh, Meredith M. Skeels, Andrea Civan-Hartzler, Wanda Pratt, University of Washington, USA
This paper describes how breast cancer patients try to manage information in clinical settings constrained by lack of advance information, awkward physical positions, fragmented attention, and heightened stress.

PAPER | Blowing in the Wind: Unanchored Patient Information Work During Cancer Care
Predrag Klasnja, University of Washington & Intel, USA
Andrea Civan-Hartzler, Kent T. Unruh, Wanda Pratt, University of Washington, USA
We report on information management activities of breast cancer patients done without adequate resources—e.g., while mobile or experiencing side-effects. We suggest ways to support these activities with mobile technology.

PAPER | Independence and Interaction: Understanding Seniors’ Privacy and Awareness Needs For Aging in Place
Jeremy Bimholz, Cornell University, USA & University of Toronto, Canada
McKenzie Jones-Rounds, Cornell University, USA
Designing for aging in place brings new twists to classic tensions between privacy and awareness. Interviews show that seniors mitigate these tensions via physical environments, temporal structures, and technology mediation.

PAPER | ContraVision: Exploring Users’ Reactions to Futuristic Technology
Clara Mancini, Yvonne Rogers, Arosha K. Bandara, The Open University, UK
Tony Coe, Two Cats Can, UK
Lukasz Jedrzeczyk, The Open University, UK
Adam N. Jonsson, University of Bath, UK
Blaine A. Price, Keerthi Thomas, The Open University, UK
Bashar Nuseibeh, The Open University, UK & University of Limerick, UK
Study illustrating a narrative method to represent futuristic technology. Can help designers elicit a wider spectrum of users’ reactions and uncover more facets of the responses that technology might encounter.

PAPER | I Don’t Mind Being Logged, but Want to Remain in Control: A Field Study of Mobile Activity and Context Logging
Tuula Kärkkäinen, Tampere University of Technology, Finland
Tuomas Vahttinen, Nokia Research Center, Finland
Kaisa Vääänänen-Vainio-Mattila, Tampere University of Technology, & Nokia Research Center, Finland
We describe a UX study of a lifelogging system based on continuous mobile phone activity logging. The results can assist designers in understanding the user needs related to lifelogging systems.

PAPERS | REGENCY 7
VISUALIZATION
SESSION CHAIR: Polle Zellweger, University of Washington

PAPER | Crowdsourcing Graphical Perception: Using Mechanical Turk to Assess Visualization Design
Jeffrey Heer, Michael Bostock, Stanford University, USA
Describes a series of experiments investigating the use of Mechanical Turk to conduct visual perception research. Contributes new insights for both visualization design and crowdsourced user studies.
PAPER | ManyNets: An Interface for Multiple Network Analysis and Visualization
Manuel Freire Morán, Universidad Autónoma de Madrid, Spain
Catherine Plaisant, Ben Shneiderman, Jen Golbeck, University of Maryland, USA
ManyNets allows analysts to visualize, rank, and filter thousands of networks. A tabular visualization enhanced with column summaries displays default and user-defined attributes. Trust network analysis is used as example.

PAPER | A Comparative Evaluation on Tree Visualization Methods for Hierarchical Structures with Large Fan-outs
Hyunjoo Song, Bohyung Kim, Seoul National University, Korea
Bongshin Lee, Microsoft Research, USA
Jinwook Seo, Seoul National University, Korea
This paper presents two extensions to the conventional node-link tree visualization. We compared them against the conventional tree visualization to see the advantages of the multi-column interface.

PAPER | Predicting the Cost of Error Correction in Character-Based Text Entry Technologies
Ahmed S. Arif, Wolfgang Stuerzlinger, York University, Canada
This article presents and verifies a new "error correction cost" model for character-based text entry technologies. It differentiates between human and system factors and enhances evaluation, comparison, and prediction.

NOTE | Estimating Residual Error Rate in Recognized Handwritten Documents Using Artificial Error Injection
Edward Lank, Ryan Stedman, Michael Terry, University of Waterloo, Canada
Describes the use of artificial errors to calibrate human performance when verifying handwriting recognition. Demonstrates that human performance on artificial errors and recognition errors is similar.

PAPER | SHRIMP - Solving Collision and Out of Vocabulary Problems in Mobile Predictive Input with Motion Gesture
Jingtao Wang, University of California at Berkeley, USA
Shumin Zhai, IBM Almaden Research Center, USA
John Canny, University of California at Berkeley, USA
Describes an effective mobile text entry system for camera phones. It maintains the speed advantage of dictionary driven input while overcoming the collision and OOV problems without mode switching.

PAPER | Let’s Go From the Whiteboard: Supporting Transitions in Work Through Whiteboard Capture and Reuse
Stacy Branham, Virginia Tech, USA
Gene Golovchinsky, Scott Carter, Jacob Biehl, FX Palo Alto Laboratory, Inc., USA
We describe the use of ReBoard, a system for capturing and reusing whiteboard content. Through a longitudinal deployment we document several new workflows, including sharing, remote access, and reuse.
14:30–16:00 | Afternoon | Monday

<table>
<thead>
<tr>
<th>PAPERS</th>
<th>CENTENNIAL 1</th>
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<tbody>
<tr>
<td>GAMES AND PLAYERS</td>
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<tr>
<td>SESSION CHAIR: Giulio Jacucci, Helsinki Institute for Information Technology</td>
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<tr>
<td>PAPER</td>
<td>The Rogue in the Lovely Black Dress: Intimacy in World of Warcraft</td>
</tr>
<tr>
<td>Tyler Pace, Shaowen Bardzell, Jeffrey Bardzell, Indiana University, USA</td>
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<tr>
<td>This paper contributes to the theorization of online intimacy through a critical analysis of 62 player accounts of intimate events in World of Warcraft. Four intimacy themes are explored.</td>
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<tr>
<td>PAPER</td>
<td>Physical Activity Motivating Games: Virtual Rewards for Real Activity</td>
</tr>
<tr>
<td>Shlomo Berkovsky, Mac Coombe, Jill Freyne, Dipak Bhandari, Nilufar Baghaei, CSIRO, Australia</td>
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<tr>
<td>We present and evaluate a novel design that leverages engagement with computer games to motivate players to perform physical activity while playing: players gain virtual rewards for real activity performed.</td>
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<tr>
<td>PAPER</td>
<td>Understanding and Evaluating Cooperative Games</td>
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<tr>
<td>Magy Seif El-Nasr, Bardia Aghabeigi, Mona Erfani, David Milam, Beth Lameman, Simon Fraser University, Canada</td>
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<tr>
<td>Hamid Maygoli, New Media Research and Education, Canada</td>
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<td>Sang Mah, Bardel Entertainment, Canada</td>
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<tr>
<td>To enhance next generation cooperative games, we present a validated Cooperative Performance Metrics (CPMs) and results of a study using the CPMs to analyze four cooperative games for kids.</td>
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<thead>
<tr>
<th>PAPER + PANEL</th>
<th>CENTENNIAL 2</th>
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<tbody>
<tr>
<td>THE INFRASTRUCTURE PROBLEM IN HCI</td>
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<tr>
<td>SESSION CHAIR: Dan Olsen, Brigham Young University</td>
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<tr>
<td>PAPER</td>
<td>The Infrastructure Problem in HC</td>
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<tr>
<td>Keith Edwards, Georgia Tech, USA</td>
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<tr>
<td>Mark W. Newman, University of Michigan, USA</td>
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<tr>
<td>Erika S. Poole, Georgia Tech, USA</td>
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<tr>
<td>HCI limits its impact by addressing infrastructure only superficially. We illustrate cases where infrastructure choices impact user experience and provide a framework for seeking a solution.</td>
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<td>PANELISTS:</td>
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<td>Mark Ackerman, University of Michigan</td>
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<td>Paula Bach, The Pennsylvania State University</td>
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<td>Steve Jackson, University of Michigan</td>
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<td>Gregory Abowd, Georgia Tech</td>
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<tr>
<td>LANGUAGE 2.0</td>
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<tr>
<td>SESSION CHAIR: Sara Kiesler, Carnegie Mellon University</td>
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<tr>
<td>Note</td>
<td>An Unobtrusive Behavioral Model of “Gross National Happiness”</td>
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<tr>
<td>Adam D. I. Kramer, University of Oregon, USA</td>
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<tr>
<td>This work uses well-established HCI methods, taken in an unobtrusive manner, creates an aggregate metric out of Facebook users’ updates, scales the metric to a national level, and publishes it.</td>
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<tr>
<td>Paper</td>
<td>The Tower of Babel Meets Web 2.0: User-Generated Content and its Applications in a Multilingual Context</td>
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<tr>
<td>Brent Hecht, Darren Gergle, Northwestern University, USA</td>
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<td>We explore language’s fragmenting effect on user-generated content by examining the knowledge diversity present in 25 Wikipedia language editions. Large differences between language editions are found, and implications are discussed.</td>
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<tr>
<td>Note</td>
<td>Indexicality of Language and the Art of Creating Treasures</td>
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<tr>
<td>Matti Rantanen, Aalto University, Finland</td>
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<tr>
<td>This paper describes a creative way of using language in a location-based treasure hunt game called geocaching.</td>
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<tr>
<td>Case Study</td>
<td>Visualizing Language Use in Team Conversations: Designing Through Theory, Experiments, and Iterations</td>
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<tr>
<td>Gilly Leshed, Dan Cosley, Jeffrey T. Hancock, Geri Gay, Cornell University, USA</td>
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<tr>
<td>Presents challenges in designing GroupMeter, visualizing aspects of language use in team conversations. Discusses potential answers and lessons for collaboration-enhancing systems through theory, a series of prototypes, and experiments.</td>
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<tr>
<th>PAPERS</th>
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<tr>
<td>MOBILE DEVICE INTERACTION</td>
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<td>SESSION CHAIR: Matt Jones, University of Swansea</td>
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<td>PAPER</td>
<td>CrossTrainer: Testing the Use of Multimodal Interfaces in Situ</td>
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<tr>
<td>Eve Hoggan, Stephen Brewster, University of Glasgow, UK</td>
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<tr>
<td>We present an 8-day study of CrossTrainer: a mobile game using crossmodal audio/tactile feedback focusing on the longitudinal effects of such feedback, the impact of location, and personal modality preference.</td>
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</tbody>
</table>
PAPER | Newport: Enabling Sharing During Mobile Calls
Junius Gunaratne, University of California, Irvine, USA
A.J. Brush, Microsoft Research, USA
Newport is a collaborative application for sharing context (e.g. location) and content (e.g. photos and notes) during mobile phone calls. This research examines the use of mobile device sharing technology.

PAPER | Attractive Phones Don’t Have To Work Better: Independent Effects of Attractiveness, Effectiveness, and Efficiency on Perceived Usability
Jeffrey M. Quinn, Tuan Q. Tran, Sprint Nextel, USA
Quantitative results from lab-based usability testing showing that product attractiveness and task performance effectiveness and efficiency all influence participant ratings of usability. Sheds light on how to interpret usability ratings.

Ruogu Kang, Wai-Tat Fu, Thomas George Kannampallil, University of Illinois at Urbana-Champaign, USA
Our study demonstrated that domain expertise is still important in guiding users to the right information: Experts are better at interpreting social tags and generating keywords in social search systems.

PAPER | Interactive Effects of Age and Interface Differences on Search Strategies and Performance
Jessie Chin, Wai-Tat Fu, University of Illinois at Urbana Champaign, USA
We show that older adults utilize stable search strategies across interfaces and tasks because of their better background medical knowledge that facilitates fluent transformation between internal concepts and external links.

PAPER | Children’s Roles Using Keyword Search Interfaces at Home
Allison Druin, Elizabeth Foss, University of Maryland, USA
Hilary Hutchinson, Google, USA
Lesheil Hatley, Evan Golub, University of Maryland, USA
Describes seven roles children display while searching the Internet and suggests search interface design directions, based on a study of 83 children ages 7, 9, and 11.
PAPER | High-Precision Magnification Lenses
Caroline Appert, Olivier Chapuis, LRI - Université Paris-Sud et CNRS, INRIA, France
Emmanuel Pietriga, INRIA, LRI - Université Paris-Sud et CNRS France

Presents and evaluates new magnification lenses that allow both fast navigation and high-precision by addressing the mismatch between visual space and motor space in the magnified region.

NOTE | Quasi-Qwerty Soft Keyboard Optimization
Xiaojun Bi, University of Toronto, Canada & IBM Research - Almaden, USA
Barton Smith, Shumin Zhai, IBM Research - Almaden, USA

By moving letters at most one key away from original positions on Qwerty, Quasi-Qwerty reduces novice user’s visual search time over freely optimized layout and improves inputting speed over Qwerty.

MARKET MODELS FOR Q&A SERVICES
SESSION CHAIR: Michael Atwood, Drexel University

PAPER | Why Pay?: Exploring How Financial Incentives are Used for Question & Answer
Gary Hsieh, Robert Kraut, Scott Hudson, Carnegie Mellon University, USA

Analysis of how financial incentives affect question asking, answer giving and knowledge search. Can assist participants and designers in using financial incentives on question and answer sites.

PAPER | Hidden Markets: UI Design for a P2P Backup Application
Sven Seuken, Harvard University, USA
Kamal Jain, Desney S. Tan, Mary Czerwinski, Microsoft Research, USA

Introduces a new paradigm called “Hidden Markets” for designing market user interfaces. Explores the paradigm using a P2P backup application and presents the results from a formative usability study.

NOTE | Re-examining Price as a Predictor of Answer Quality in an Online Q&A Site
Grace YoungJoo Jeon, Yong-Mi Kim, Yan Chen, University of Michigan, USA

Re-analyzes data from previous Google Answers studies by applying Heckman analysis to resolve selection bias from non-randomly missing data. Offers new explanation for role of price in a Q&A site.

NOTE | Why User of Yahoo! Answers Do Not Answer Questions
David Dearman, Khai N. Truong, University of Toronto, Canada

We provide insights into why members of the Yahoo! Answers community choose to not answer the questions they have read.

CASE STUDIES | HANOVER FG

CALL CENTERS
SESSION CHAIR: Andrew J. Ko, University of Washington

CASE STUDY | Ontology Models for Interaction Design: Case Study of Online Support
Keith Butler, University of Washington, USA
Jia Zhang, University of Texas, USA
Anne Hunt, Beth Huffer, USA
John Muehliesen, Microsoft, USA

CASE STUDY | The Fulfillment of User Needs and the Course of Time in Field Investigation
Claudia Nass, Daniel Kerkow, Jessica Jung, Fraunhofer Institute for Experimental Software Engineering, Germany

We present a study realized in a call-center aimed at balancing business and users’ goals in order to enhance user experience and hence positively influence the call agents’ emotional state.

CASE STUDY | Using “Rapid Experimentation” to Inform Customer Service Experience Design
Soni Meckem, Cisco Systems, Inc., USA
Jennifer Lee. Carlson, Tec-Ed, Inc., USA

Cisco used “Rapid Experimentation” methodology for iterative, high-velocity studies in a global customer service experience design project, achieving design goals in 8 weeks, 4 ahead of the planned 12-week schedule.

SPECIAL INTEREST GROUP | CHICAGO ABC

UNDERSTANDING “COOL”

ORGANIZERS:
Karen Holtzblatt, David Rondeau, InContext Design, USA
Les Holtzblatt, The MITRE Corporation, USA
Monday | Late Afternoon | 16:30–18:00

PAPERS | CENTENNIAL 1

DANCE, DUST, AND DRAMA: DESIGNING DESIGN
SESSION CHAIR: Jodi Forlizzi, Carnegie Mellon University

PAPER | Hand in Hand with the Material: Designing for Suppleness
Petra Sundström, Kristina Höök, Stockholm University, Sweden
Describes the complexity in designing for a supple interaction, involving users bodily and emotionally into a ‘dance’ with a system. Here with a special focus on material properties.

PAPER | The Case of the Disappearing Ox: Seeing Through Digital Images to an Analysis of Ancient Texts
Grace de la Flor, University of Oxford, UK
Paul Luff, King’s College, UK
Marina Jirotka, Ruth Kirkham, John Pybus, Annamaria Carusi, University of Oxford, UK
Drawing upon a video-based study of how classicists interpret fragmented and indistinct texts we discuss the consequences for systems designed to support research including image processing technologies and visualization techniques.

PAPER | The Implications of Improvisational Acting and Role-Playing on Design Methodologies
Ben Medler, Brian Magerko, Georgia Institute of Technology, USA
Describes how improvisational theatre and role-playing performance techniques work, how they have been used by designers and where the techniques differentiate from one another.

PANEL | CENTENNIAL 2

WHAT MAKES A GOOD DESIGN CRITIC? FOOD DESIGN VS. PRODUCT DESIGN CRITICISM
PANELISTS:
Patañjali Venkatacharya, Oracle USA, Inc. and Patañjali’s Kitchen LLC, USA
Jonathan Kessler, Food Critic & Writer, USA
Tami Hardeman, Food Stylist, USA
Ed Seiber, Seiber Design, Inc., USA
Bill Buxton, Microsoft Research, USA
Explorations of the intersection between food design and product design. Multi-disciplinary designers will contrast methods used for critiquing end-to-end experiences, including the spaces in which these experiences are consumed.

PAPERS | CENTENNIAL 3

COMPUTING ON THE BODY
SESSION CHAIR: Jeffrey Bardzell, Indiana University-Bloomington

PAPER | BuzzWear: Alert perception in Wearable Tactile Displays on the Wrist
Seungyon Claire Lee, Thad Starner, Georgia Institute of Technology, USA
Presents the design of 2-dimensional wearable tactile displays on the wrist and the evaluation performed with visual distraction. Guides the design of eyes-free wearable alert systems to support mobile interaction.

PAPER | *CATch: A Scalable, Plug-n-Play Wearable Computing Framework for Novices and Children
Grace Ngai, Stephen C.F. Chan, Vincent T.Y. Ng, Joey C.Y. Cheung, Sam S.S. Choy, Winnie W.Y. Lau, Jason T.P. Tse, Hong Kong Polytechnic University, Hong Kong
This paper presents *CATch, a modular framework consisting of controllers, sensors, actuators, a bus, and a graphical programming language. It enables novices and children to create innovative applications with wearable computers quickly.

PAPER | Skinput: Appropriating the Body as an Input Surface
Chris Harrison, Carnegie Mellon University, USA
Desney Tan, Dan Morris, Microsoft Research, USA
Skinput is a technology that appropriates the human body for acoustic transmission, allowing the skin to be used as a finger input surface.

PAPERS/NOTES | CENTENNIAL 4

ORGANIZING AND ORGANIZATIONS
SESSION CHAIR: Arnie Lund, Microsoft

PAPER | Timeline Collaboration
Morten Bohøj, University of Aarhus and Alexandra Institute, Denmark
Nikolaj Gandrup Borchorst, Niels Olof Bouvin, Susanne Bødker, Par-Ola Zander, University of Aarhus, Denmark
Employing an example this paper presents timeline interaction across groups of citizens and municipal workers. The contribution of the paper regards development of interaction techniques when collaboration happens over time.
NOTE | Informal Interactions in Nonprofit Networks
Jennifer Stoll, W. Keith Edwards, Elizabeth D. Mynatt, Georgia Institute of Technology, USA
Informal interactions within interorganizational networks are not well understood or supported. Findings from our field study point to a need for tools/systems to better facilitate complex ad hoc interorganizational activities.

PAPER | Managing Nomadic Knowledge: A Case Study of the European Social Forum
Saqib Saeed, Volkmar Pipek, Markus Rohde, Volker Wulf, University of Siegen, Germany
The paper portrays a concept of "Nomadic Knowledge" based on an empirical case study. It highlights knowledge sharing practices and provides directions for technical support in managing nomadic knowledge.

NOTE | FingerCloud: Uncertainty and autonomy handover in capacitive sensing
Simon Rogers, John Williamson, Craig Stewart, Rod Murray-Smith, University of Glasgow, UK
Probabilistic filters are used for robust finger tracking over capacitive arrays on handheld devices, and we show how uncertainty from such sensing can be used in interaction design.

PAPER | The Generalized Perceived Input Point Model and How to Double Touch Accuracy by Extracting Fingerprints
Christian Holz, Patrick Baudisch, Hasso Plattner Institute, Germany
Proposes a new model explaining the inaccuracy of touch input. Shows how to exploit the model to create highly precise touch input devices.

NOTE | Finger-Count & Radial-Stroke Shortcuts: 2 Techniques for Augmenting Linear Menus on Multi-Touch Surfaces
Gilles Bailly, Eric Lecolinet, Yves Guiard, Telecom ParisTech, France
We present and evaluate Finger-Count and Radial-Stroke Shortcuts, two multi-finger two-handed interaction techniques aimed at augmenting the menubar on multi-touch surfaces, while maintaining compatibility with traditional interaction techniques.

NOTE | Speech Dasher: Fast Writing using Speech and Gaze
Keith Vertanen, David J.C. MacKay, University of Cambridge, UK
Speech Dasher allows writing using speech and a zooming interface. Users speak what they want to write and then navigate through the space of recognition hypotheses to correct errors.

END-USER PROGRAMMING I
SESSION CHAIR: Carl Gutwin, University of Saskatchewan

PAPER | d.note: Revising User Interfaces Through Change Tracking, Annotations, and Alternatives
Björn Hartmann, University of California at Berkeley, USA
Sean Follmer, Antonio Ricciardi, Timothy Cardenas, Scott R. Klemmer, Stanford University, USA
Introduces d.note, a revision tool for user interface prototypes. Reports two studies that compare production and interpretation of revisions in d.note to sketching on static images.

PAPER | FrameWire: A Tool for Automatically Extracting Interaction Logic from Paper Prototyping Tests
Yang Li, University of Washington, USA
Xiang Cao, Microsoft Research Cambridge, UK
Katherine Everitt, Morgan Dixon, James Landay, University of Washington, USA
Describes a system for automatically extracting interaction logic and test statistics from video clips of paper prototyping tests and generating interactive HTML-based prototypes, a way of enhancing UI prototyping practice.

PAPER | Example-Centric Programming: Integrating Web Search into the Development Environment
Joel Brandt, Stanford University & Adobe Systems, USA
Mira Dontcheva, Marcos Weskamp, Adobe Systems, USA
Scott Klemmer, Stanford University, USA
Presents the design and evaluation of a system that helps programmers locate example code. Findings suggest that task-specific search interfaces can significantly change how and when people search the Web.

PERFORMANCE, STAGECRAFT, AND MAGIC
SESSION CHAIR: Barry Brown, University of California San Diego

PAPER | Eliza meets the Wizard-of-Oz: Blending Machine and Human Control of Embodied Characters
Steven Dow, Stanford University, USA
Manish Mehta, Blair MacIntyre, Georgia Institute of Technology, USA
Michael Mateas, University of California at Santa Cruz, USA
We describe a design space for blending machine and human control in embodied character experiences and longitudinally investigate two different “behind-the-scenes” tasks for amateur operators during a gallery installation.
Monday | Late Afternoon | 16:30–18:00

PAPER | A Stage-Based Model of Personal Informatics Systems
Ian Li, Anind Dey, Jodi Forlizzi, Carnegie Mellon University, USA
We present a stage-based model of personal informatics systems, which collect personal information for the purpose of self-reflection. We describe properties of the model and barriers in the stages.

PAPER | Deception and Magic in Collaborative Interaction
Joe Marshall, Steve Benford, Tony Pridmore, University of Nottingham, UK
A study of an interactive magical performance that employed video tracking highlights beneficial uses of deception to create magical interfaces and extends HCI theories concerning collaboration, ambiguity and trajectories.

TOCHI INVITED PAPERS | HANOVER FG

STUDYING AND PROTOTYPING
SESSION CHAIR: Robin Jeffries, Google, USA

TOCHI | Unpacking The Television: User Practices Around A Changing Technology
Louise Barkhuus, Barry Brown, University of California at San Diego, USA
Describes the changing world of television watching, contrasting PVR and TV downloading use.

TOCHI | The Calendar is Crucial: Coordination and Awareness through the Family Calendar
Carman Neustaedter, Kodak Research Labs, USA
AJ Brush, Microsoft Research, USA
Saul Greenberg, University of Calgary, Canada
Describes interview studies of families’ calendaring routines. Presents findings on calendar types, calendar content, family types, and guidelines for the design of digital family calendars.

TOCHI | Out On The Town: A Socio-Physical Approach To The Design Of A Context Aware Urban Guide
Jeni Paay, Jesper Kjeldskov, Aalborg University, Denmark
Steve Howard, Bharat Dave, The University of Melbourne, Australia
We propose, illustrate and evaluate a multi-disciplinary approach combining rapid ethnography, architectural analysis, design sketching and paper prototyping to influence design of mobile context-aware social software for urban environments.

TOCHI | Rapid Prototyping and Evaluation of In-Vehicle Interfaces
Dario Salvucci, Drexel University, USA
Describes an integrated tool for prototyping and evaluating new in-vehicle interfaces using cognitive models. Allows designers to evaluate interfaces with respect to their potential for driver distraction.

SPECIAL INTEREST GROUP | CHICAGO ABC

CAN WE ALL STAND UNDER OUR UMBRELLA? THE ARTS AND DESIGN RESEARCH IN HCI
ORGANIZERS:
Gilbert Cockton, Northumbria University, UK
Bardzell Shaowen, Indiana University, USA
Blythe Mark, University of York, UK
Bardzell Jeffrey, Indiana University, USA
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<tr>
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<th>Centennial 1</th>
<th>Centennial 2</th>
<th>Centennial 3</th>
<th>Centennial 4</th>
<th>Regency 5</th>
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<th>Regency 7</th>
<th>Hanover CDE</th>
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<td>8:00-8:45</td>
<td>Papers</td>
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<td>Pointing and Selecting</td>
<td>Browsing</td>
<td>Understanding &amp; Supporting Programming</td>
<td>At Home With Computing</td>
<td>End User Programming</td>
<td>Sharing in Social Media</td>
<td>HCI &amp; India</td>
<td>Tackle Interaction</td>
<td>User Characteristics &amp; Large-Scale Tracking</td>
<td>Best Practices in Longitudinal Research</td>
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<td>9:00-10:30</td>
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<td>Case Study</td>
<td>Understanding &amp; Supporting Programming</td>
<td>Avatar &amp; Virtual Environments</td>
<td>At Home With Computing</td>
<td>Sense and Sustainability</td>
<td>Brains and Brawn</td>
<td>Seniors Using Technologies</td>
<td>Touch &amp; Tactic</td>
<td>Gesturing and Drawing</td>
<td>The Impact of Mergers/Acquisitions on User Experience Organizations</td>
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<td>11:30-13:00</td>
<td>CHI 2010</td>
<td>Panel</td>
<td>Papers</td>
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<td>Atlanta, GA, USA</td>
<td>Computing Technology in International Development</td>
<td>Crisis Informatics</td>
<td>At Home With Computing</td>
<td>Tagging</td>
<td>Crisis Informatics</td>
<td>Seniors Using Technologies</td>
<td>Tackle Interaction</td>
<td>Gesture and Drawing</td>
<td>Engineering Community</td>
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<td>14:30-16:00</td>
<td>Lifetime Res.</td>
<td>Panel</td>
<td>Case Studies</td>
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<td>Award</td>
<td>E-Government: Services for Everyone, Everywhere, Eventually</td>
<td>Software and Methods</td>
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<td>Tangible</td>
<td>HCI for All</td>
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<td>Tackle Interaction</td>
<td>TOCHI U/ID for Next Generation UI</td>
<td>CHI 2010 User Experience</td>
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**Commons/Grand Hall**
- Exhibits & Info Booth: 10:30-16:00
- Media Showcase Performance Panel I: 13:30-16:00
- Media Showcase Interactive Demos: 10:30-11:30, 13:30-14:30

**Special Events**
- Media Showcase Video Night: 18:30-20:00
- Spotlights on Work-in-Progress Posters (WIP 1-96) and Student Research Competition (SRC): 10:30-11:30
- SIG Engineering Community: 11:30-13:00
- SIG CHI 2010 User Experience: 18:00-20:00
- Media Showcase User Experience: 18:30-20:00
- Centennial 2
SIGCHI AWARD INVITED TALK | CENTENNIAL 2
LIFETIME PRACTICE AWARD RECIPIENT:
Karen Holtzblatt, InContext
SESSION CHAIR: Gary Olson, University of California Irvine, USA
See page 14

PAPERS | CENTENNIAL 3

BROWSING
SESSION CHAIR: John Stasko, Georgia Tech

PAPER | A Study of Tabbed Browsing Among Mozilla Firefox Users
Patrick Dubroy, Ravin Balakrishnan, University of Toronto, Canada
Study of how Firefox users use multiple tabs and windows. Provides quantitative and qualitative data which can guide the design of future web browser interfaces.

PAPER | Using Text Animated Transitions to Support Navigation in Document Histories
Fanny Chevalier, Microsoft-INRIA joint center, France
Pierre Dragicevic, INRIA, France
Anastasia Bezerianos, Ecole Centrale Paris, France
Jean-Daniel Fekete, INRIA, France
We propose and evaluate smooth text animations for transitioning between document revisions. Combined with simple visualization and navigation tools, we introduce a system for rapid exploration of text revision histories.

PAPER | Dynamic Query Interface for Spatial Proximity Query with Degree-of-Interest Varied by Distance to Query Point
Myoungsu Cho, Bohyoun Kim, Seoul National University, Korea
Dong Kyun Jeong, Samsung Advanced Institute of Technology, Korea
Yeong-Gil Shin, Jinwook Seo, Seoul National University, Korea
This paper presents a novel dynamic query interface for formulating composite queries where the satisfying range of an attribute depends on another attribute. Our controlled experiment showed the interface’s efficiency.

PAPER | CENTENNIAL 1

POINTER AND SELECTING
SESSION CHAIR: Michel Beaudouin-Lafon, Université Paris-Sud

PAPER | Why it’s Quick to be Square: Modelling New and Existing Hierarchical Menu Designs
David Ahlström, Klagenfurt University, Austria
Andy Cockburn, University of Canterbury, New Zealand
Carl Gutwin, University of Saskatchewan, Canada
Pourang Irani, University of Manitoba, Canada
Describes a model that predicts performance with hierarchical menus. Empirically validates the model with various designs, including a novel SquareMenu. Demonstrates how modelling can motivate new designs and explain performance.

PAPER | pCubee: A Perspective-Corrected Handheld Cubic Display
Ian Stavness, Billy Lam, Sidney Fels, University of British Columbia, Canada
Describes a handheld cubic display system made with five flat-panel screens that uses perspective-corrected rendering and real-time physics simulation to create compelling visualization and interaction techniques for 3D content.

PAPER | Bias towards Regular Configuration in 2D Pointing
Huahai Yang, IBM Research - Almaden, USA
Xianggang Xu, Civil Aviation Medical Center, China
Introduce the framework of configuration space as a way of understanding HCI tasks. Show that 2D pointing task performance reflects a bias towards a regular configuration.

PAPER | A Study of Tabbed Browsing Among Mozilla Firefox Users
Patrick Dubroy, Ravin Balakrishnan, University of Toronto, Canada
Study of how Firefox users use multiple tabs and windows. Provides quantitative and qualitative data which can guide the design of future web browser interfaces.

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Yeong-Gil Shin, Jinwook Seo, Seoul National University, Korea
This paper presents a novel dynamic query interface for formulating composite queries where the satisfying range of an attribute depends on another attribute. Our controlled experiment showed the interface’s efficiency.
PAPERS/NOTES | CENTENNIAL 4

AT HOME WITH COMPUTING
SESSION CHAIR: Gillian R. Hayes, University of California Irvine

PAPER | Access Control for Home Data Sharing: Attitudes, Needs and Practices
Michelle L. Mazurek, J.P. Arsenault, Joanna Bresee, Nitin Gupta, Carnegie Mellon University, USA
Iulia Ion, ETH-Zurich, Switzerland
Michael K. Reiter, University of North Carolina, USA

Presents results from interviews with non-expert households concerning attitudes and practices regarding controlling access to home-centered data. Provides guidelines for designing usable access-control systems for home environments.

NOTE | Sharing Conversation and Sharing Life: Video Conferencing in the Home
Tejinder K. Judge, Virginia Tech, USA
Carman Neustaedter, Kodak Research Labs, USA

A study of video conferencing practices in the home. Findings will inform the design of future domestic communication technologies.

PAPER | Who's Hogging the Bandwidth: The Consequences of Revealing the Invisible in the Home
Marshini Chetty, Georgia Institute of Technology, USA
Richard Banks, Richard Harper, Tim Regan, Abigail Sellen, Christos Gkantsidis, Thomas Karagiannis, Peter Key, Microsoft Research Cambridge, UK

Created and evaluated a home bandwidth management tool which showed revealing resource usage surfaces household politics and that personal representation and access control are important design considerations for such systems.

NOTE | Investigating Narrative Structure in Mobile Games for Seniors
Sharon Lynn Chu Yew Yee, Henry Been-Lirn Duh, National University of Singapore, Singapore
Francis Quek, Virginia Polytechnic Institute and State University, USA

Examines the value of narrative structure on self-reported gameplay enjoyment among senior adults through a controlled study with nineteen elderly, regardless of their gameplay style.

PAPERS | REGENCY 5

END-USER PROGRAMMING II
SESSION CHAIR: Stephen Voida, University of California Irvine

PAPER | Learning on the Job: Characterizing the Programming Knowledge and Learning Strategies of Web Designers
Brian Dorn, Mark Guzdial, Georgia Institute of Technology, USA

Reports on a study of professional web developers that explores their knowledge of fundamental programming concepts and their strategies for learning new information while working.

PAPER | A Strategy-Centric Approach to the Design of End-User Debugging Tools
Valentina I. Grigoreanu, Oregon State University & Microsoft Corporation, USA
Margaret M. Burnett, Oregon State University, USA
George G. Robertson, Microsoft Research, USA

Demonstrates the potential of a strategy-centric approach to tool design through StratCel, an add-in for Excel. StratCel increased participants' debugging success. Results also include validated design guidelines for debugging tools.

PAPER | Here's What I Did: Sharing and Reusing Web Activity with ActionShot
Ian Li, Carnegie Mellon University, USA
Jeffrey Nichols, Tessa Lau, Clemens Drews, Allen Cypher, IBM Research - Almaden, USA

ActionShot creates a fine-grained history of users' browsing activities, facilitates browsing and searching through this history, and enables sharing portions of the history through established social networking tools.
**SHARING IN SOCIAL MEDIA**

**SESSION CHAIR:** Heather Richter Lipford, University of North Carolina

**NOTE** | Patterns of Usage in an Enterprise File-Sharing Service: Publicizing, Discovering, and Telling the News

Michael Muller, David R Millen, Jonathan Feinberg, IBM Research, USA

Describes four user activity patterns in a large-scale enterprise file-sharing system. Goals are to inform social-software research, and to influence service user interface design.

**PAPER** | The Life and Times of Files and Information: A Study of Desktop Provenance

Carlos Jensen, Heather Lonsdale, Oregon State University, USA
Eleanor Wynn, Intel Corporation, USA
Jill Cao, Michael Slater, Thomas G. Dietterich, Oregon State University, USA

This paper presents a longitudinal study of information flow and reuse on the desktop. These results inform the design of new desktop search techniques and novel approaches to file management.

**PAPER** | The Effect of Audience Design on Labeling, Organizing, and Finding Shared Files

Emilee Rader, Northwestern University, USA

Experiment results suggest thinking about labeling and organizing files not just as storage and categorization, but as a communicative activity.

**NOTE** | Fitting an Activity-Centric System into an Ecology of Workplace Tools

Aruna Balakrishnan, Carnegie Mellon University, USA
Tara Matthews, Thomas Moran, IBM Research, USA

User study of an activity-centric system in real work environments, describes the main usage pattern for an activity-centric system and evidence that it helped reduce fragmentation of activity-related artifacts.

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**HCI AND INDIA**

**SESSION CHAIR:** Scott Robertson, University of Hawaii

**PAPER** | Avaaj Otalo - A Field Study of an Interactive Voice Forum for Small Farmers in Rural India

Neil Patel, Stanford University, USA
Deepthi Chittamuru, University of California at Berkeley, USA
Anupam Jain, IBM India Research Laboratory, India
Paresh Dave, Development Support Center, India
Tapan S. Parikh, University of California at Berkeley, USA

Presents the usage patterns and social dynamics that emerged on Avaaj Otalo over seven months. We discuss implications of the findings on design of voice social media for developing regions.

**PAPER** | An Exploratory Study of Unsupervised Mobile Learning in Rural India

Anuj Kumar, Carnegie Mellon University, USA
Anuj Tewari, University of California at Berkeley, USA
Geeta Shroff, Carnegie Mellon University, USA
Deepthi Chittamuru, University of California at Berkeley, USA
Matthew Kam, Carnegie Mellon University, USA
John Canny, University of California at Berkeley, USA

Presents a study of unsupervised usage of cellphone-based learning games in rural India. Shows the viability of mobile learning in everyday rural contexts, and challenges for researchers undertaking similar studies.

**PAPER** | Where There’s a Will There’s a Way: Mobile Media Sharing in Urban India

Thomas N. Smyth, Georgia Institute of Technology, USA
Satish Kumar, Indrani Medhi, Microsoft Research India, India
Kentaro Toyama, University of California at Berkeley, USA

Describes a rich ecosystem surrounding the exchange of peer-to-peer entertainment media on Bluetooth-enabled mobile phones in urban India. Argues that incentives such as entertainment can overcome many barriers in ICT4D.
PAPERS | HANOVER CDE

TACTILE INTERACTION
SESSION CHAIR: Orit Shaer, Wellesley College

PAPER | Mobile Music Touch: Mobile Tactile Stimulation For Passive Learning
Kevin Huang, Georgia Institute of Technology, USA
Daniel Kohlsdorf, Claas Ahlrichs, University of Bremen, Germany
Thad Starner, Georgia Institute of Technology, USA
Ruediger Leibrandt, University of Bremen, Germany
Ellen Do, Gil Weinberg, Georgia Institute of Technology, USA

We introduce Passive Haptic Learning through Mobile Music Touch, a glove with embedded vibrators and music player, which trains users to play simple piano melodies while they attend other tasks.

PAPER | Characteristics of Pressure-Based Input for Mobile Devices
Craig Stewart, University of Glasgow, UK
Michael Rohs, TU Berlin, Germany
Georg Essl, University of Michigan, USA
Sven Kratz, TU Berlin, Germany

Conducted studies to clarify fundamental characteristics of finger-based pressure input on mobile devices. Serves as basis for future interaction design and research for force-based mobile interactions.

PAPER | LayerPaint: A Multi-layer Interactive 3D Painting Interface
Chi-Wing Fu, Jiazhi Xia, Ying He, Nanyang Technological University, Singapore

A multi-layer WYSIWYG interactive painting interface that provides us with novel painting interactions, such as drawing of very long strokes continuously over frontmost and occluded surfaces in a depth-connected manner.

PAPERS | HANOVER FG

USER CHARACTERISTICS AND LARGE-SCALE TRACKING
SESSION CHAIR: Darren Gergle, Northwestern University

PAPER | The Effects of Diversity on Group Productivity and Member Withdrawal in Online Volunteer Groups
Jilin Chen, Yuqing Ren, John Riedl, University of Minnesota, USA

Longitudinal analysis of the effects of group diversity on Wikipedia based on social psychology theories. Quantitatively demonstrated the relationship between diversity measures and group performance in online volunteer groups.

PAPER | Gender Demographic Targeting in Sponsored Search
Bernard J. Jansen, Lauren Solomon, The Pennsylvania State University, USA

This research concludes gender advertising on Web search engines doesn’t generate more sales and costs more relative to gender-neutral advertising. It is beneficial for advertisers to target gender-neutral advertising.

PAPER | Exploring the Workplace Communication Ecology
Thea Turner, Pernilla Qvarfordt, Jake T. Biehl, Gene Golovchinsky, Maribeth Back, FXPAL, USA

We explore the communication ecology of a small company, providing insights on trends in technology use, how users choose among available technologies, and how technology use can define other behaviors.

SPECIAL INTEREST GROUP | CHICAGO ABC

BEST PRACTICES IN LONGITUDINAL RESEARCH
ORGANIZERS:
Jhilmil Jain, Hewlett Packard Laboratories, USA
Stephanie Rosenbaum, Tec-Ed, Inc, USA
Catherine Courage, Citrix Systems, USA
PAPER | Exploring the Accessibility and Appeal of Surface Computing for Older Adult Health Care Support
Anne Marie Piper, Ross Campbell, James D. Hollan, University of California at San Diego, USA
This paper explores multitouch surface technology with older adults in the context of supporting health care interaction between a doctor and older patient.

PAPER | Patients, Pacemakers, and Implantable Defibrillators: Human Values and Security for Wireless Implantable Medical Devices
Tamara Denning, Alan Borning, Batya Friedman, University of Washington, USA
Brian Gill, Seattle Pacific University, USA
Tadayoshi Kohno, University of Washington, USA
William H. Maisel, Medical Device Safety Institute, Beth Israel Deaconess Medical Center, and Harvard Medical School, USA
Presents results of an investigation of patient views and values regarding computer security for implantable cardiac devices with wireless capabilities, and offers design guidelines for future device security systems.

CASE STUDY | Rehabilitation Centred Design
Madeline Balaam, University of Sussex, UK
Stefan Rennick Egglestone, University of Nottingham, UK
Ann-Marie Hughes, University of Southampton, UK
Thomas Nind, University of Dundee, UK
Anna Wilkinson, Sheffield Hallam University, UK
Eric Harris, Lesley Axcelrod, University of Sussex, UK
Geraldine Fitzpatrick, Vienna Technical University, Austria
Presents a case study of designing interactive technology for post-stroke rehabilitation at home. Highlights complex tensions between designing for rehabilitation (and other possible behaviour-change scenarios) and designing for the user.

PAPER | Perceptions and Practices of Usability in the Free/Open Source Software (FOSS) Community
Michael Terry, Matthew Kay, Ben Lafreniere, University of Waterloo, Canada
Reports why open source developers are motivated to address usability concerns in the absence of economic incentives.

PAPER | End-User Mashup Programming: Through the Design Lens
Jill Cao, Oregon State University, USA
Yann Riche, Riche Design, USA
Susan Wiedenbeck, Drexel University, USA
Margaret Burnett, Oregon State University, USA
Valentina I. Grigoreanu, Oregon State University & Microsoft Corporation, USA
We use design theories as a lens on end-user mashup programming, revealing insights into programming as a design activity and implications for the design of end-user programming environments.

PAPER | What Would Other Programmers Do? Suggesting Solutions to Error Messages
Björn Hartmann, University of California at Berkeley, USA
Daniel MacDougall, Joel Brandt, Scott R. Klemmer, Stanford University, USA
Introduces HelpMeOut, a social recommender system that aids the debugging of error messages during programming by suggesting solutions that peers have applied in the past.
PAPERS/NOTES/CASE STUDY | CENTENNIAL 4

TAGGING
SESSION CHAIR: Jennifer Lai, IBM

NOTE | Cultural Difference in Image Tagging
Wei Dong, Wai-Tat Fu, University of Illinois at Urbana-Champaign, USA

Our study showed cultural differences in how European Americans and Chinese assign tags to different parts of digital images. Results are useful for developing culture-sensitive tag-based image search interface.

PAPER | Social Tagging Revamped: Supporting the Users’ Need of Self-promotion through Social Filtering
Mauro Cherubini, Telefónica Research, Spain
Alejandro Gutierrez, University of Illinois at Urbana-Champaign, USA
Rodrigo de Oliveira, Nuria Oliver, Telefónica Research, Spain

We consider this work as a first step towards the definition of Social Games With A Purpose: games that could take advantage of the specific properties of social networks.

NOTE | Some Observations on the “Live” Collaborative Tagging of Audio Conferences in the Enterprise
Shreeharsh Kelkar, Ajita John, Doree Duncan Seligmann, Avaya Labs Research, USA

Presents observations on the usage of a system that allows participants to collaboratively “live” tag an ongoing meeting. Post-meeting, live-tags may help audio navigation and audio search of archived meetings.

CASE STUDY | Best of Both Worlds: Improving Gmail Labels with the Affordances of Folders
Kerry Rodden, Michael Leggett, Google, USA

Describes a redesign of Gmail’s user interface for labeling, to provide more folder-like functionality. Includes detailed insight into design process, and post-launch evaluation of impact on millions of users.

PAPERS/NOTE | REGENCY 5

SENSE AND SUSTAINABILITY
SESSION CHAIR: Daniela Busse, SAP

PAPER | One Size Does Not Fit All: Applying the Transtheoretical Model to Energy Feedback Technology Design
Helen Ai He, Saul Greenberg, Elaine M. Huang, University of Calgary, Canada

Our motivational framework for sustainable design, based on the Transtheoretical Model, moves beyond a “one-size-fits-all” solution to target individual motivations at different stages of behavioral change to motivate sustainable action.

PAPER | Small Business Applications of Sourcemap: A Web Tool for Sustainable Design and Supply Chain Transparency
Leonardo Bonanni, MIT Media Laboratory, USA
Matthew Hockenberry, MIT Center for Future Civic Media, USA
David Zwarg, Avencia Inc., USA
Chris Csikszentmihalyi, MIT Center for Future Civic Media, USA
Hiroshi Ishii, MIT Media Laboratory, USA

We present techniques for design and supply chain transparency to support social and environmental sustainability by small businesses from the perspective of a participatory process of design in HCI.

NOTE | FeedWinnower: Layering Structures Over Collections of Information Streams
Lichan Hong, Gregorio Convertino, Bongwon Suh, Ed H. Chi, Sanjay Kairam, Palo Alto Research Center (PARC), USA

Presenting an enhanced RSS feed reader helping users to filter feed items by four facets (topic, people, source, and time), thus facilitating feed triage. A formative evaluation is also reported.

PAPERS/NOTES | REGENCY 6

BRAINS AND BRAWN
SESSION CHAIR: Steve Benford, Nottingham University

NOTE | Making Muscle-Computer Interfaces More Practical
T. Scott Saponas, University of Washington, USA
Desney S. Tan, Dan Morris, Microsoft Research, USA
Jim Turner, Microsoft Corporation, USA
James A. Landay, University of Washington, USA

We extend previous muscle-computer interface research by presenting techniques for cross-session finger gesture classification using our wireless muscle-sensing armband.
NOTE | A Novel Brain-Computer Interface Using a Multi-Touch Surface
Beste F. Yuksel, Michael Donnerer, James Tompkin, Anthony Steed, University College London, UK
Describes a brain-computer interface that allows users to select real objects placed on a multi-touch table solely using their thoughts. Highlights potential for BCIs to be integrated into novel uses.

PAPER | The Influence of Implicit and Explicit Biofeedback in First-Person Shooter Games
Kai Kuikkaniemi, Toni Laitinen, Marko Turpeinen, Timo Saari, Ilkka Kosunen, Helsinki Institute for Information Technology, Finland
Niklas Ravaja, Center for Knowledge and Innovation Research, Finland
Describes a biofeedback adaptive first-person shooter game platform and an analysis of the impact of implicit and explicit biofeedback mechanisms. Can help in designing biofeedback and affective computer system.

PAPER | Effects of Interactivity and 3D-motion on Mental Rotation Brain Activity in an Immersive Virtual Environment
Daniel Sjölie, Kenneth Bodin, Eva Elgh, Johan Eriksson, Lars-Erik Janlert, Lars Nyberg, Umeå University, Sweden
Presents results from a study on the effect of interaction on brain activity in a virtual environment. Can inform the development of complex interaction styles incorporating brain measurements.

PAPERS | REGENCY 7

SHARING CONTENT AND SEARCHES
SESSION CHAIR: Dan Cosley, Cornell University

PAPER | Tools-at-Hand and Learning in Multi-Session, Collaborative Search
Robert Capra, Gary Marchionini, Javier Velasco-Martin, Katrina Muller, University of North Carolina, USA
We present results from interviews with 30 people in three cohorts (academic, corporate, and medical information) about their current practices conducting, managing, and sharing information from ongoing, exploratory searches.

PAPER | Share: A programming environment for loosely bound cooperation
Yannick Assogba, MIT Media Lab, USA
Judith Donath, Harvard University Berkman Center, USA
Describes the design of a system for programmer cooperation via code sharing in web based communities. Explores a form of collaboration centered on shared resources rather than shared goals.

PAPER | Enhancing Directed Content Sharing on the Web
Michael S. Bernstein, Adam Marcus, David R. Karger, Robert C. Miller, MIT CSAIL, USA
We introduce FeedMe, a plug-in for Google Reader that makes link sharing a more salient part of the user experience through recipient recommendations and social feedback.

alt.chi | HANOVER CDE

MONSTERS ATTACK!
SESSION CHAIR: Daniel Wigdor, Microsoft

alt.chi | Sequential Art for Science and CHI
Duncan Rowland, University of Nottingham, UK
Dan Porter, Giant Thumb, UK
Mel Gibson, Northumbria University, UK
Kevin Walker, Joshua Underwood, Rose Luckin, Knowledge Lab, UK
Hillary Smith, Geraldine Fitzpatrick, Judith Good, University of Sussex, UK
Brendan Walker, Aerial UK, UK
Alan Chamberlain, Stefan Rennick Egglestone, Joe Marshall, Holger Schnädelbach, Steve Benford, University of Nottingham, UK

alt.chi | Early Explorations of CAT: Canine Amusement and Training
Chadwick A. Wingrave, Jeremy Rose, University of Central Florida, USA
Todd Langston, Pack Life K-9 Behavior Solutions, USA
Joseph J. LaViola Jr, University of Central Florida, USA

alt.chi | The Coffee Lab: Developing a Public Usability Space
Maria Karam, Ryerson University, Canada

alt.chi | Augmented Reality - Surface Style
Paul Hoover, Luis E. Cabrera, Curt Aumiller, Microsoft, USA

alt.chi | There’s a Monster in my Kitchen: Using Aversive Feedback to Motivate Behaviour Change
Ben Kirman, Conor Linehan, Shaun Lawson, Derek Foster, Mark Doughty, University of Lincoln, UK

alt.chi | Blowtooth: Pervasive Gaming in Unique and Challenging Environments
Conor Linehan, Ben Kirman, Shaun Lawson, Mark Doughty, University of Lincoln, UK
NOTE | Scale Detection for a priori Gesture Recognition
Caroline Appert, Université Paris-Sud, CNRS, France
Olivier Bau, Université Paris-Sud, INRIA, France
Presents an algorithm to estimate the scale of an incomplete gesture input in comparison with a gesture template. Shows how this algorithm can improve users’ experience with gesture-based interfaces.

NOTE | Insight into Goal-Directed Movement Strategies
Karin Nieuwenhuizen, Eindhoven University of Technology, The Netherlands
Dzmitry Aliakseyeu, Philips Research Eindhoven, The Netherlands
Jean-Bernard Martens, Eindhoven University of Technology, The Netherlands
Proposal of an analysis method that provides more detailed insight into applied movement strategies when using computer input devices. Can assist in the development of input devices and interaction techniques.

PAPER | Usable Gestures for Mobile Interfaces: Evaluating Social Acceptability
Julie Rico, Stephen Brewster, University of Glasgow, UK
This research investigates the importance of social acceptability as a design consideration in developing mobile gesture-based systems. The results describe user perceptions and social influences that affect gesture acceptability.

PAPER | iCanDraw? - Using Sketch Recognition and Corrective Feedback to Assist a User in Drawing Human Faces
Daniel Dixon, Manoj Prasad, Tracy Hammond, Texas A&M University, USA
Describes an assistive drawing application using sketch recognition for evaluating and providing corrective feedback on a user’s sketch of a human face shown in a reference image.
NOTE | The Secure Haptic Keypad: A Tactile Password System  
Andrea Bianchi, Korean Advanced Institute of Science and Technology, Korea  
Ian Oakley, Universidade da Madeira, Portugal  
Dong-Soo Kwon, Korean Advanced Institute of Science and Technology, Korea

This paper proposes a novel design for shoulder-surﬁng resistant password input interface and method based on tactile cues (haptic password).

NOTE | ColorPIN - Securing PIN entry through indirect input  
Alexander De Luca, Katja Hertzschuch, Heinrich Hussmann, University of Munich, Germany

NOTE | Shoulder-Surfing Resistance with Eye-Gaze Entry in Click-Based Graphical Passwords  
Alain Forget, Sonia Chiasson, Robert Biddle, Carleton University, Canada

NOTE | Visual vs. Compact: A Comparison of Privacy Policy Interfaces  
Heather Richter Lipford, Jason Watson, Michael Whitney, University of North Carolina at Charlotte, USA  
Katherine Froiland, University of Minnesota, USA  
Robert W. Reeder, Microsoft, USA

A comparison study of two prototype interfaces for privacy policies finds that users perform similarly with each, but have a clear preference for one or the other.

CASE STUDY | Challenges of Software Recontextualization: Lessons Learned  
Monique Janneck, University of Hamburg, Germany

Analyzes critical factors for success or failure of software introduction processes based on an understanding of software development as recontextualization process on the technical, organizational, human, and task level.

PAPER | Touch-Display Keyboards: Transforming Keyboards into Interactive Surfaces  
Florian Block, Hans Gellersen, Lancaster University, UK  
Nicolas Villar, Microsoft Research Cambridge, UK

Touch-Display Keyboards (TDKs) combine the physical qualities of conventional keyboards with dynamic display and touch-sensing. We explore the design-space of the TDK and contribute a series of novel interaction techniques.
PAPER | iCon: Utilizing Everyday Objects as Additional, Auxiliary and Instant Tabletop Controllers

Kai-Yin Cheng, Rong-Hao Liang, Bing-Yu Chen, National Taiwan University, Taiwan
Rung-Huei Liang, National Taiwan University of Science and Technology, Taiwan
Sy-Yen Kuo, National Taiwan University, Taiwan

We explored the possible design to utilize everyday objects on the tabletop as additional, auxiliary and instant controllers in low precision, low engagement, and medium-to-high frequency of use scenario.

PAPER | Lumino: Tangible Blocks for Tabletop Computers Based on Glass Fiber Bundles

Patrick Baudisch, Torsten Becker, Frederik Rudeck, Hasso Plattner Institute, Germany

Lumino building blocks allow tabletop computers based on diffuse illumination to recognize objects arranged in a three-dimensional structure.

PAPER | MOSES: Exploring New Ground in Media and Post-Conflict Reconciliation

Thomas N. Smyth, John Etherton, Michael L. Best, Georgia Institute of Technology, USA

Explores potential of rich multimedia for peacebuilding and reconciliation in countries after civil war. Describes MOSES video-sharing system deployed in Liberia. Reports qualitative study demonstrating positive reconciliation impact of system.

PAPER | Blogging in a Region of Violent Conflict: Supporting Transition to Recovery

Ban Al-Ani, Gloria Mark, Bryan Semaan, University of California at Irvine, USA

This paper illustrates how blogs are important social tools that can support people in war zones by providing a safe virtual environment for community, identity, expression, and emotional support.

PAPER | Microblogging During Two Natural Hazards Events: What Twitter May Contribute to Situational Awareness

Sarah Vieweg, Amanda L. Hughes, Kate Starbird, Leysia Palen, University of Colorado, USA

Describes an analysis of Twitter communications during two concurrent natural hazards events in North America. Presents a theoretical framework to support extraction of situational awareness data during mass emergencies.

PAPER | Where Are You Pointing? The Accuracy of Deictic Pointing in CVEs

Nelson Wong, Carl Gutwin, University of Saskatchewan, Canada

We investigate how well people can point and interpret the direction of another person’s pointing gesture. Our results show that deixis can be successful in CVEs for many pointing situations.

PAPER | Lie Tracking: Social Presence, Truth and Deception in Avatar-Mediated Telecommunication

William Steptoe, Anthony Steed, Aitor Rovira, University College London, UK
John Rae, Roehampton University, UK

Investigates user behavior, social presence and media richness during truthful and deceptive interaction in avatar- and video-mediated telecommunication. Discusses implications for the design of future visual telecommunication media interfaces.

PAPER | Embodied Social Proxy: Mediating Interpersonal Connection in Hub-and-Satellite Teams

Gina Venolia, John Tang, Microsoft Research, USA
Ruy Cervantes Fregoso, University of California at Irvine, USA
Sara Bly, Sara Bly Consulting, USA
George Robertson, Bongshin Lee, Kori Inkpen, Microsoft Research, USA

We developed a telepresence device which represents a remote coworker in his otherwise-collocated team. We found that the device’s continuous physical presence made the remote worker more socially present.
SENIORS USING TECHNOLOGIES

SESSION CHAIR: Panayiotis Zaphiris, Cyprus University of Technology

PAPER | PointAssist for Older Adults: Analyzing Sub-Movement Characteristics to Aid in Pointing Tasks
Juan Pablo Hourcade, Christopher M. Nguyen, Keith B. Perry, Natalie L. Denburg, University of Iowa, USA

Evaluation of a novel approach to assist older adults in pointing tasks. Discussion of differences with young children and correlations with neuropsychological tests.

PAPER | Steadied-Bubbles: Combining Techniques to Address Pen-Based Pointing Errors for Younger and Older Adults
Karyn Moffatt, Joanna McGrenere, University of British Columbia, Canada

Older adults struggle with pen-based selection. We extend existing mouse-based and younger-user-targeted techniques and show that technique performance is task dependent. As such, combining techniques offers the best support overall.

PAPER | Learning to text: An interaction analytic study of how seniors learn to enter text on mobile phones
Alexandra Weilenmann, Gothenburg University, Sweden

Analysis of how senior users learn to enter text on their mobile phones. Implications for how we design for the aging population, and for how we think about novice users.

PAPER | Short and Tweet: Experiments on Recommending Content from Information Streams
Jilin Chen, University of Minnesota, USA
Rowan Nairn, Les Nelson, Palo Alto Research Center, USA
Michael Bernstein, Massachusetts Institute of Technology, USA
Ed Chi, Palo Alto Research Center, USA

Demonstrated quantitatively the effectiveness of 12 different algorithm designs for recommending interesting URLs on Twitter. Conducted field study of the system and discussed generalizing the result to similar platforms.

NOTE | Characterizing Debate Performance via Aggregated Twitter Sentiment
Nicholas Diakopoulos, Rutgers University, USA
David A. Shamma, Yahoo! Research, USA

Using aggregated Twitter sentiment we demonstrate visuals and metrics which can be used to inform the design of visual analytics systems for sensemaking around social video events.

NOTE | Dandelion: Supporting Coordinated Collaborative Authoring in Wikis
Changyan Chi, Michelle X. Zhou, Min Yang, Wenpeng Xiao, Yiqin Yu, Xiaohua Sun, IBM Research - China, China

Dandelion presents a tag-based approach to coordinated, co-authoring within a wiki. Four real-world pilot deployments demonstrate the usefulness of Dandelion especially in structured, collaborative authoring situations with designated coordinators.

ALTERNATIVE METHODS

SESSION CHAIR: Steve Harrison, Virginia Tech

alt.chi | Hard-To-Use Interfaces Considered Beneficial (Some Of The Time)
Yann Riche, Riche Design, USA
Nathalie Henry Riche, Microsoft Research, USA
Petra Isenberg, University of Calgary, Canada
Anastasia Bezerianos, Ecole Centrale Paris, France

alt.chi | Communicating Software Agreement Content Using Narrative Pictograms
Matthew Kay, Michael Terry, University of Waterloo, Canada

alt.chi | There’s Methodology In The Madness: Toward Critical HCI Ethnography
Amanda Williams, Concordia University, Canada
& University of California at Irvine, USA
Lilly Irani, University of California at Irvine, USA
alt.chi | Interaction Design In The University: Designing Disciplinary Interactions
Gale Moore, Danielle Lottridge, University of Toronto, Canada

alt.chi | Design Situations And Methodological Innovation In Interaction Design
Gilbert Cockton, Northumbria University, UK

alt.chi | Experience In Social Affective Applications: Methodologies And Case Study
Paul André, m. c. schraefel, University of Southampton, UK
Alan Dix, University of Lancaster, UK
Ryen W. White, Microsoft Research, USA

TOCHI | A Natural, Tiered And Executable Uidl For 3d User Interfaces Based On Concept-Oriented Design
Chadwick Wingrave, Joseph J. LaViola Jr., UCF, USA
Doug A. Bowman, Virginia Tech, USA
Studied natural representations of 3D interface design and development. This resulted in a natural, tiered, executable model to address development complexity and improve reuse as shown through multiple evaluation approaches.

SPECIAL INTEREST GROUP | CHICAGO ABC

CHI 2010 ENGINEERING COMMUNITY SIG: THE ROLE OF ENGINEERING WORK IN CHI
ORGANIZERS:
Keith Butler, CHI 2010 Engineering Community Chair,
University of Washington, USA
SIGCHI AWARD INVITED TALK | CENTENNIAL 1

CHI LIFETIME RESEARCH AWARD RECIPIENT:
Lucy Suchman, Lancaster University

SESSION CHAIR: To be announced
See page 13

PANEL | CENTENNIAL 2

E-GOVERNMENT: SERVICES FOR EVERYONE, EVERYWHERE, EVENTUALLY

PANELISTS:
Jeff Johnson, UI Wizards, Inc. & SIGCHI U.S. Public Policy Committee, USA
Jonathan Lazar, Towson University & SIGCHI U.S. Public Policy Committee, USA

PAPERS | CENTENNIAL 3

HCI FOR ALL

SESSION CHAIR: Michael Muller, IBM

PAPER | Homeless Young People’s Experiences with Information Systems: Life and Work in a Community Technology Center
Jill Palzkill, Woelfer, David G. Hendry, University of Washington, USA

Reports on the use of digital media by homeless young people in a community technology center. Framework of ecological considerations can assist designers of information systems for homeless populations.

PAPER | Feminist HCI: Taking Stock and Outlining an Agenda for Design
Shaowen Bardzell, Indiana University, USA

This paper outlines the state of the art and an agenda for “feminist HCI” as a theoretical perspective on interaction design. It proposes a number of “qualities of feminist interaction.”

PAPER | Postcolonial Computing: A Lens on Design and Development
Lilly Irani, Janet Vertesi, Paul Dourish, Kavita Philip, University of California at Irvine, USA
Rebecca E. Grinter, Georgia Institute of Technology, USA

HCI research areas across the globe have raised complex issues. Postcolonial computing is a lens for understanding cultural difference, development, uneven economic relations, and cultural knowledges.

PAPERS/NOTES | CENTENNIAL 4

MACHINE LEARNING AND WEB INTERACTIONS

SESSION CHAIR: Per Ola Kristensson, University of Cambridge

PAPER | Interactive Optimization for Steering Machine Classification
Ashish Kapoor, Bongshin Lee, Desney Tan, Eric Horvitz, Microsoft Research, USA

ManiMatrix is an interactive system that allows interactive refinement of classification boundaries in a multiclass setting. The system interweaves visualization, interaction, and optimization to steer classification according to users preferences.

NOTE | A Longitudinal Study of How Highlighting Web Content Change Affects People’s Web Interactions
Jaime Teevan, Susan T. Dumais, Daniel J. Liebling, Microsoft Research, USA

Longitudinal study shows that highlighting changes in Web content leads to increased Web page revisitation, and improved perception and use of content change within the revisited content.

NOTE | Examining Multiple Potential Models in End-User Interactive Concept Learning
Saleema Amershi, James Fogarty, University of Washington, USA
Ashish Kapoor, Desney S. Tan, Microsoft Research, USA

Re-examines a traditional interactive machine learning focus on “what class is this object?”, broadening interaction to include examining multiple potential models. This approach improves the quality of end-user trained models.

PAPER | Signed Networks in Social Media
Jure Leskovec, Stanford University, USA
Daniel Huttenlocher, Jon Kleinberg, Cornell University, USA

We analyze on-line social networks where links can be either positive or negative. We extend theories from social psychology to explore implications of these signed networks for social computing applications.
CARING FOR OURSELVES
SESSION CHAIR: Mark Perry, Brunel University

PAPER | CONSTRUCTING IDENTITIES through Storytelling in Diabetes Management
Lena Mamykina, Columbia University, USA
Andrew Miller, Elizabeth Mynatt, Georgia Institute of Technology, USA
Daniel Greenblatt, Smart Technologies, Canada

We discuss the importance of identity management in chronic disease care and the opportunities to support construction and negotiation of identity with health monitoring applications.

PAPER | Self-Monitoring, Self-Awareness, and Self-Determination in Cardiac Rehabilitation
Julie Maitland, National Research Council Canada Institute for Information Technology, Canada
Matthew Chalmers, University of Glasgow, UK

A qualitative study of behavioural change within cardiac rehabilitation. Findings can assist those interested in developing health technology that accounts for the competing values and broader context of everyday life.

PAPER | Negotiating Boundaries: Managing Disease at Home
Rikke Aarhus, Stinne Aalakke Ballegaard, Aarhus University, Denmark

Explores patients’ boundary work in carrying out self-care in the home. Can assist designers in the developing of new medical technologies to be used outside a medical setting.

NOTE | Layered Elaboration: A New Technique for Co-Design with Children
Gregory Walsh, Allison Druin, Mona Leigh Guha, Beth Foss, Evan Golub, Leisl Hatley, Beth Bonsignore, Sonia Frankel, University of Maryland, USA

This paper reports on “Layered Elaboration,” a new co-design technique. It allows design teams to generate ideas through an iterative process in which prior ideas stay intact while extending concepts.

PAPER | Don’t Just Stare at Me!
Ning Wang, Jonathan Gratch, University of Southern California, USA

Investigates perception of rapport when users interact via avatars in virtual world. Unveils dependencies between components of rapport and informs the design of agents and avatars in computer mediated communication.

PAPER | Video Playdate: Toward Free Play across Distance
Svetlana Yarosh, Georgia Institute of Technology, USA
Kori Inkpen, A.J. Brush, Microsoft Research, USA

Presents an investigation of remote video-mediated free play between children. Identifies the challenges they faced and design tradeoffs to provide directions for future video-mediated communication systems.

COMMUNICATING
SESSION CHAIR: Susan Fussell, Cornell University

NOTE | Momentum: Getting and Staying on Topic Before the Brainstorm
Patti Bao, Elizabeth Gerber, Darren Gergle, David Hoffman, Northwestern University, USA

Describes a creativity support tool that invites minimal participation before a brainstorm and then visualizes the results during the brainstorm.

NOTE | Apatite: A New Interface for Exploring APIs
Daniel S. Eisenberg, Jeffrey Stylos, Brad A. Myers, Carnegie Mellon University, USA

Apatite is a new interface for exploring APIs that visualizes associations among items across different levels of an API’s hierarchy. Users can search for actions without first choosing classes.
NOTE | Push-and-Pull Switching: Window Switching based on Window Overlapping
Quan Xu, Géry Casiez, LIFL & INRIA Lille & University of Lille, France
Presents Push-and-Pull Switching, a new window management technique based on window overlapping to implicitly define groups and switch between these groups using “push and pull” operations.

NOTE | Animated UI Transitions and Perception of Time — a User Study on Animated Effects on a Mobile Screen
Jussi Huhtala, Ari-Heikki Sarjanoja, Nokia Research Center, Finland
Jani Mäntyjarvi, Minna Isomursu, Technical Research Centre of Finland, Finland
Jonna Häkkilä, Nokia Research Center, Finland
A user study concerning the effect of animation on the perception of transition duration on mobile screens. Gives guidelines for UI designers working with mobile devices.

PAPERS | HANOVER CDE
DRIVING, INTERRUPTED
SESSION CHAIR: Juan Pablo Hourcade, University of Iowa

Jodi Forlizzi, Carnegie Mellon University, USA
Will Barley, Northwestern University, USA
Thomas Seder, General Motors, USA
We consider navigation as collaboration rather than map reading activity. We show that collaboration during navigation is influenced by social and task role. We present design implications for future systems.

PAPER | Studying Driver Attention and Behaviour for Three Configurations of GPS Navigation in Real Traffic Driving
Brit Susan Jensen, Mikael B. Skov, Nissanthen Thiruravichandran, Aalborg University, Denmark
Investigates different output modalities (visual, audio, audio-visual) configurations for a GPS navigation system on their impact on driving behavior and driver attention.

PAPER | Cars, Calls and Cognition: Investigating Driving and Divided Attention
Shamsi Iqbal, Yun-Cheng Ju, Eric Horvitz, Microsoft Research, USA
Study of interactions between driving complexity, phone conversations and focus. Structural and cognitive properties of driving and conversations are analyzed to understand effects of conflict on performance on both.

TOCHI | HANOVER FG
INPUT AND DIRECT MANIPULATION
SESSION CHAIR: Shumin Zhai, IBM Research, Almaden

TOCHI | Using Direct And Indirect Input Devices: Attention Demands And Age-Related Differences
Anne McLaughlin, North Carolina State University, USA
Wendy A. Rogers, Arthur D. Fisk, Georgia Tech, USA
The contribution of this paper is a way of thinking about input devices and interfaces in terms of match or mismatch with task attributes and user characteristics.

TOCHI | Shifting The Focus From Accuracy To Recallability: A Study Of Informal Note Taking On Mobile IT
Liwei Dai, Xerox Corp., USA
Andrew Sears, Rich Goldman, UMBC, USA
Describes an informal note-taking approach that discourages user-initiated error correction and facilitates recall with enhanced notes. Improves the overall efficacy of informal notes and recognition-based text entry using mobile technologies.

TOCHI | Modelcraft: Capturing Freehand Annotations And Edits On 3D Models Using A Digital Pen
Hyunyoung Song, University of Maryland, USA
Francois Guimbretière, Hod Lipson, Cornell University, USA
Presents a system that interprets interaction with physical models and translates it to 3D digital models to facilitate the work cycle of architects.

TOCHI | Can Direct Manipulation Lower The Barriers To Computer Programming And Promote Transfer Of Training?
Christopher Hundhausen, Sean F. Farley, Jonathan L. Brown, Washington State University, USA
Experimental evaluation and video analysis of novices’ use of a novel direct manipulation computer programming environment. Illuminates value of direct manipulation in providing a “way in” to programming.

SPECIAL INTEREST GROUP | CHICAGO ABC

CHI 2010 USER EXPERIENCE
ORGANIZERS:
Keith Instone, IBM, USA
Elizabeth Buie, Luminance Consulting, USA
Susan Dray, Dray & Associates, USA
Jhilmil Jain, HP, USA
Gitte Lindgaard, Carleton University, Canada
<table>
<thead>
<tr>
<th>Time</th>
<th>Location</th>
<th>Event Description</th>
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<tr>
<td>8:00-8:45</td>
<td>Centennial 1</td>
<td>Social Impact Award: How do user experiences change over time?</td>
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<td>Centennial 2</td>
<td>Panel on user experience and change in sustainability</td>
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<td>Centennial 3</td>
<td>Papers on using videos in education</td>
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<td>Centennial 4</td>
<td>Papers on privacy and classroom technologies</td>
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<td>9:00-10:30</td>
<td>Regency 5</td>
<td>Expressing and understanding opinions in social media</td>
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<td>Papers on pixel and perception</td>
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<td>Regency 7</td>
<td>Papers on case studies and bang a table</td>
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<td>Hanover CDE</td>
<td>Papers on storytelling and alt.chi.</td>
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<td>Hanover FG</td>
<td>Papers on humans and social media</td>
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<td>Chicago ABC</td>
<td>SIG on how to bring HCI research and practice closer together</td>
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<td>11:30-13:00</td>
<td>Centennial 1</td>
<td>Papers on case studies and interactions in the world</td>
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<td>Panel on mapping the landscape of sustainable HCI</td>
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<td>Centennial 3</td>
<td>Papers on using your social network</td>
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<td>Papers on social media users and classroom technologies</td>
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<td>Regency 5</td>
<td>Papers on working with medical records</td>
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<td>Papers on expertise and speech</td>
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<td>Regency 7</td>
<td>Papers on subtle expressions through sound and text</td>
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<td>Hanover CDE</td>
<td>Papers on death and fear</td>
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<td>Papers on human and social connectivity</td>
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<td>SIG on creating prosocial media for children</td>
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<td>Centennial 1</td>
<td>Papers on medical data</td>
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<td>Panel on HCl, communities and politics</td>
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<td>Centennial 3</td>
<td>Papers on home eco behavior</td>
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<td>Papers on sharing in specific communities</td>
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<td>Papers on tools affecting the enterprise</td>
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<td>Chicago ABC</td>
<td>SIG on designing user interfaces for IoT and multi-touch</td>
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<td>Papers on notes and reflection</td>
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<td>Panel on HCl, communities and politics</td>
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SIGCHI AWARD INVITED TALK | CENTENNIAL 1
SESSION CHAIR: Loren Terveen, University of Minnesota
SOCIAL IMPACT AWARD RECIPIENTS: Allison Druin and Ben Bederson, University of Maryland
(See page 14)

PANEL | CENTENNIAL 2
MANAGING USER EXPERIENCE...MANAGING CHANGE
PANELISTS:
Carola Thompson, SAP Labs, LLC, USA
Richard Anderson, Independent, USA
Irene Au, Google, USA
Cordell Ratzlaff, Cisco, USA
Nida Zada, Plaxo, Inc., USA

PAPERS | CENTENNIAL 3
LOOKING WITH VIDEO
SESSION CHAIR: Dan Olsen, Brigham Young University
PAPER | Temporal hybridity: Mixing live video footage with instant replay in real time
Arvid Engstrom, Oskar Juhlin, Mobility Studio, Interactive Institute, Sweden
Mark Perry, Brunel University, UK
Mathias Broth, Linköping University, Sweden
An interaction analysis of instant replay in live sport is presented, showing how the production of real-time video footage is coordinated with historical footage. Design implications are presented.

PAPER | Experience, Adjustment, and Engagement: The Role of Video in Law Enforcement
Joe Tullio, Motorola, Inc., USA
Elaine Huang, University of Calgary, Canada
David Wheatley, Harry Zhang, Claudia Guerrero, Motorola, Inc., USA
Amruta Tamdoo, University of Illinois, Chicago, USA
This research describes end-to-end use of ubiquitous video in law enforcement, spanning multiple law enforcement roles, work contexts, and facilities throughout the life cycle of the video.

PAPER | ToolClips: An Investigation of Contextual Video Assistance for Functionality Understanding
Tovi Grossman, George Fitzmaurice, Autodesk Research, Canada
Investigates ToolClips, interactive video based tool tips that provide users with contextual video assistance. Aids in functionality understanding and can significantly improve task completion rate in comparison to traditional documentation.

PAPERS | CENTENNIAL 4
PRIVACY
SESSION CHAIR: Kirstie Hawkey, University of British Columbia
PAPER | Friends Only: Examining a Privacy-Enhancing Behavior in Facebook
Fred Stutzman, Jacob Kramer-Duffield, University of North Carolina at Chapel Hill, USA
Using boundary regulation theories of privacy, this paper explores and identifies factors associated with a privacy enhancing behavior in the social network site Facebook.

PAPER | Moving Beyond Untagging: Photo Privacy in a Tagged World
Andrew Besmer, Heather Richter Lipford, University of North Carolina at Charlotte, USA
We examine user concerns of photo tagging on social network sites, discuss design guidelines, and present a new mechanism for improving privacy with tagged photos.

PAPER | Standardizing Privacy Notices: An Online Study of the Nutrition Label Approach
Patrick Gage Kelley, Lucian Cesca, Joanna Bressee, Lorrie Faith Cranor, Carnegie Mellon University, USA
Our 764-participant user study shows that well-designed, standardized privacy policy formats can benefit consumers by improving their understanding of a company’s practices, shortening reading time, and increasing reader enjoyment.
EXPRESSING AND UNDERSTANDING OPINIONS IN SOCIAL MEDIA

SESSION CHAIR: Cliff Lampe, Michigan State University

PAPER | “America Is Like Metamucil”: Fostering Critical and Creative Thinking about Metaphor in Political Blogs
Eric P. S. Baumer, Jordan Sinclair, Bill Tomlinson, University of California at Irvine, USA

User study of a tool for blog readers that identifies conceptual metaphors in political blogs. Shows how aspects of computational analysis can effectively support critical and creative thinking about metaphors.

PAPER | Understanding Dispute Resolution Online: Using Text to Reflect Personal and Substantive Issues in Conflict
Matt Billings, Leon Watts, University of Bath, UK

Through interviews with online conciliators and qualitative analysis of Wikipedia mediations, we show how conciliators can resolve conflicts positively in a text-based online community by ‘mutating’ the persistent text.

PAPER | Presenting Diverse Political Opinions: How and How Much
Sean Munson, Paul Resnick, University of Michigan, USA

Previous selective exposure research offers competing theories about people’s preference for bias in news aggregators. We find individual differences: some people are diversity-seeking while others are challenge-averse.

PAPER | GUI Testing Using Computer Vision
Tsung-Hsiang Chang, MIT CSAIL, USA
Tom Yeh, UMIACS & HCIL, University of Maryland, USA
Robert Miller, MIT CSAIL, USA

Presents an approach to automate GUI testing and a test-by-demonstration system to generate test scripts automatically. Can facilitate unit testing, regression testing, and test-driven development for GUI developers and testers.

NOTE | Faster Progress Bars: Manipulating Perceived Duration with Visual Augmentations
Chris Harrison, Zhiquan Yeo, Scott E. Hudson, Human-Computer Interaction Institute, Carnegie Mellon University, USA

Human perception of time is fluid and can be manipulated in purposeful ways. We evaluate two progress bar graphical variations that alter user’s perception of duration, making operations “appear” faster.

NOTE | Evaluation of Progressive Image Loading Schemes
Chris Harrison, Anind K. Dey, Scott E. Hudson, Human-Computer Interaction Institute, Carnegie Mellon University, USA

We present an empirical evaluation of popular progressive image loading methods. Results suggest a spiral variation of bilinear interlacing can yield an improvement in content recognition time.

pixels and perception

SESSION CHAIR: Allen Cypher, IBM

PAPER | Prefab: Implementing Advanced Behaviors Using Pixel-Based Reverse Engineering of Interface Structure
Morgan Dixon, James Fogarty, University of Washington, USA

We present Prefab, a system for implementing advanced behaviors through the reverse engineering of the pixels in graphical interfaces.

BANG A TABLE

SESSION CHAIR: Dan Morris, Microsoft Research

PAPER | Digital Drumming: A Study of Co-located, Highly Coordinated, Dyadic Collaboration
Bobby Beaton, Steve Harrison, Deborah Tatar, Virginia Tech, USA

Study used a drumming task to examine coordination techniques between human-human pairings and human-computer pairings. Provides insight to the differences in techniques people use to coordinate when doing creative tasks.
PAPER | G-nome Surfer: a Tabletop Interface for Collaborative Exploration of Genomic Data
Orit Shaer, Wellesley College, USA
Guy Kol, Babson College, USA
Megan Strait, Wellesley College, USA
Chloe Fan, Carnegie Mellon University, USA
Catherine Grevet, Georgia Institute of Technology, USA
Sarah Elfenbein, Wellesley College, USA

Describes existing tasks of biologists working with genomic data and discusses design implications. It then presents a tabletop application that supports these tasks and facilitates collaborative exploration of genomic data.

CASE STUDY | Using Metaphors to Create a Natural User Interface for Microsoft Surface
Kay Hofmeester, Dennis Wixon, Microsoft, USA

Using metaphors to design and research a new touch interface for Microsoft Surface. This method can provide guidance to design new interfaces that are understandable and predictable to users.

PAPER | Let’s Play Chinese Characters - Mobile Learning Approaches via Culturally Inspired Group Games
Feng Tian, Fei Lv, Institute of Software, Chinese Academy of Sciences, China
Jingtao Wang, University of California at Berkeley, U.S.A
Hongan Wang, Wencan Luo, Institute of Software, Chinese Academy of Sciences, China
Matthew Kam, Carnegie Mellon University, U.S.A
Vidya Setlur, Nokia Research Palo Alto, U.S.A
Guozhong Dai, Institute of Software, Chinese Academy of Sciences, China
John Canny, University of California at Berkeley, U.S.A

Design two mobile learning games, Multimedia Word and Drumming Strokes, based on analysis of 25 traditional Chinese group games. Intend to improve children’s Chinese language skills through group playing activities.

PAPER | A Simple Index for Multimodal Flexibility
Antti Oulasvirta, Joanna Bergstrom-Lehtovirta, Helsinki Institute for Information Technology HIIT, Finland

Presents a method to quantify the flexibility with which users can allocate their exteroceptive senses away from the interactive task.
PAPER | Social Gravity: A Virtual Elastic Tether for Casual, Privacy-Preserving Pedestrian Rendezvous

John Williamson, University of Glasgow, UK
Simon Robinson, Swansea University, UK
Craig Stewart, Rod Murray-Smith, University of Glasgow, UK
Matt Jones, Swansea University, UK
Stephen Brewster, University of Glasgow, UK

We demonstrate a geolocated mobile meetup system which preserves privacy and needs no visual attention, and present a detailed experiment showing the practicality of the interaction.

SPECIAL INTEREST GROUP | CHICAGO ABC

HOW TO BRING HCI RESEARCH AND PRACTICE CLOSER TOGETHER

ORGANIZERS:
Keith Instone, IBM, USA
Elizabeth Buie, Luminanze Consulting, USA
Susan Dray, Dray & Associates, USA
Jhilmil Jain, HP, USA
Gitte Lindgaard, Carleton University, Canada
Arnie Lund, Microsoft, USA
PAPERS/CASE STUDY | CENTENNIAL 1

INTERACTIONS IN THE WORLD
SESSION CHAIR: Volker Wulf, University of Siegen

PAPER | An Empirical Task Analysis of Warehouse Order Picking Using Head-Mounted Displays
Kimberly A. Weaver, Georgia Institute of Technology, USA
Hannes Baumann, TZI, Universität Bremen, Germany
Thad Starner, Georgia Institute of Technology, USA
Hendrick Iben, Michael Lawo, TZI, Universität Bremen, Germany

We present an empirically grounded study using task guidance systems in an ecologically motivated environment to understand the advantages of an HMD-based system over current warehouse order picking methods.

PAPER | Where is my Team? Supporting Collaboration and Situation Awareness with Tactile Displays
Martin Pielot, OFFIS Institute for Information Technology, USA
Oliver Krull, Susanne Boll, University of Oldenburg, Germany

This paper investigates encoding spatial locations (direction + distance) of several people with tactile torso displays and shows that this can improve situation awareness in situations with high cognitive workload.

CASE STUDY | Designing An Advanced Visualization System for Geological Core Drilling Expeditions
Yu-Chung Chen, Sangyoon Lee, HyeJung Hur, Jason Leigh, Andrew Johnson, Luc Renambot, University of Illinois at Chicago, USA

Case study of the design process of a scalable visualization system for a domain with high knowledge barrier. It can assist designers/developers in understanding the population with similar properties.

PAPERS/NOTE | CENTENNIAL 3

USING YOUR SOCIAL NETWORK
SESSION CHAIR: Jeff Hancock, Cornell University

PAPER | What Do People Ask Their Social Networks, and Why? A Survey Study of Status Message Q&A Behavior
Meredith Ringel Morris, Jaime Teevan, Microsoft Research, USA
Katrina Panovich, Massachusetts Institute of Technology, USA

Explores the phenomenon of using social network status messages to ask questions, including the frequency of the behavior, the question types and topics, and people’s motivation for asking and answering.

NOTE | Affirming the self through online profiles: Beneficial effects of social networking websites
Catalina Toma, Cornell University, USA

Social networking sites enable users to create flattering profiles and to amass social connections. This paper argues that reviewing this positive representation of the self has self-affirming benefits, in that it makes users more secure and open-minded.

NOTE | Improving Social Game Engagement on Facebook through Enhanced Socio-Contextual Information
Ben Kirman, Shaun Lawson, Conor Linehan, University of Lincoln, UK
Francesco Martino, Luciano Gamberti, University of Padova, Italy
Andrea Gaggioli, Istituto Auxologico Italiano, Italy

Describes a controlled study of a Facebook application with socio-contextual enhancements. Findings confirm that enhanced social information increases engagement in social games.

PAPER | The Role of Community and Groupware in Geocache Creation and Maintenance
Carman Neustaedter, Kodak Research Labs, USA
Anthony Tang, University of British Columbia, Canada
Tejinder K. Judge, Virginia Tech, USA

Describes a study of geocaching. Results outline the importance of community and groupware for content generation and maintenance in location-based experiences.
PAPERS | CENTENNIAL 4
CLASSROOM TECHNOLOGIES
SESSION CHAIR: Allison Druin, University of Maryland

PAPER | Expressive Robots in Education
Martin Saerbeck, Eindhoven University of Technology, Netherlands
Tom Schut, Philips Research, The Netherlands
Christoph Bartneck, Eindhoven University of Technology, Netherlands
Maddy D. Janse, Philips Research, Netherlands

Varies the perceived social supportiveness of a robotic tutor in the five dimensions role model, nonverbal feedback, attention guiding, empathy and communicativeness. Benefits are demonstrated in an educational application.

PAPER | Exploring Affective Technologies for the Classroom with the Subtle Stone
Madeline Balaam, University of Sussex, UK
Geraldine Fitzpatrick, Vienna University of Technology, Austria
Judith Good, University of Sussex, UK
Rosemary Luckin, London Knowledge Lab, UK

Presents a user study exploring the role of tangible affective technologies in the classroom. Can assist designers in creating technologies to better support emotions within this setting.

PAPER | vSked: Evaluation of a System to Support Classroom Activities for Children with Autism
Sen H. Hirano, Michael T. Yeganyan, University of California at Irvine, USA
Gabriela Marcu, Carnegie Mellon University, USA
David H. Nguyen, University of California at Irvine, USA
LouAnne Boyd, Orange County Department of Education, USA
Gillian R. Hayes, University of California at Irvine, USA

Describes vSked, an interactive and collaborative visual scheduling system, and the results from its deployment in an autism-specific classroom. Can help designers exploring interactive technologies in special education settings.

PAPERS | REGENCY 5

WORKING WITH MEDICAL RECORDS
SESSION CHAIR: Geraldine Fitzpatrick, University of Vienna

PAPER | Doctors and Psychosocial Information: Records and Reuse in Inpatient Care
Xiaomu Zhou, Mark Ackerman, Kai Zheng, University of Michigan, USA

This study shows that doctors’ use of psychosocial information in electronic patient records could be substantially improved. We offer design suggestions for EHRs and a new approach towards medical representations.

PAPER | Supporting Coordination in Surgical Suites: Physical Aspects of Common Information Spaces
Peter G. Scupelli, Carnegie Mellon University, USA
Yan Xiao, Baylor Health Care System, USA
Susan R. Fussell, Cornell University, USA
Sara Kiesler, Mark D. Gross, Carnegie Mellon University, USA

Presents a field study of how the physical environment and the positioning of information displays affect OR staff coordination; provides design principles for positioning large displays within the physical environment.

PAPER | Documenting Transitional Information in EMR
Yunan Chen, University of California at Irvine, USA

The findings of this study call for designing EMR system not only for keeping patients’ formal records, but also for documenting transitional information in the chart-writing process.

PAPERS | REGENCY 6

EXPERTISE
SESSION CHAIR: Sadat Shami, IBM

PAPER | How Power Users Help and Hinder Open Bug Reporting
Andrew J. Ko, Parmit K. Chilana, University of Washington, USA

Analyzes the success of various types of contributors to the Mozilla bug database. Results suggest that most reports were duplicates, narrow expert feature requests, or end-user technical support.
PAPER | Bringing the field into focus: User-centered design of a patient expertise locator
Andrea Civan-Hartzler, David W. McDonald, Chris Powell, Meredith M. Skeels, Marlee Mukai, Wanda Pratt, University of Washington, USA
Describes iterative design of expertise locator for patients to find peers for health advice. Design groups, informed by fieldwork, enrich our understanding of supporting trade-offs when sharing sensitive health information.

PAPER | What Do You Know? Experts, Novices and Territoriality in Collaborative Systems
Jennifer Thom-Santelli, IBM TJ Watson Research, USA
Dan R. Cosley, Geri Gay, Cornell University, USA
Describes how experts express territoriality, behaviors communicating ownership, in an online space. Can assist designers in managing these naturally occurring expressions so they have a beneficial influence on collaborative activity.

NOTE | Understanding the Impact of Abstracted Audio Preview of SMS
Alireza Sahami Shirazi, University of Duisburg-Essen, Germany
Ari-Heikki Sarjanoja, Nokia Research Center, Finland
Florian Alt, Albrecht Schmidt, University of Duisburg-Essen, Germany
Jonna Hakkilä, Nokia Research Center, Finland
Introduces the concept of audio previews of SMS by real-time analyzing of a message’s content and providing auditory cues in addition to the notification tone upon receiving an SMS.

PAPERS/NOTES | REGENCY 7
SOUND AND SPEECH
SESSION CHAIR: Khai Troung, University of Toronto
PAPER | Clutching at Straws: Using Tangible Interaction to Provide Non-Visual Access to Graphs
David McGookin, Euan Robertson, Stephen Brewster, University of Glasgow, UK
Investigates the application of tangible user interfaces to non-visual interaction scenarios for graph and chart access. Provides guidelines and requirements for future non-visual tangible interaction research.

PAPER | Effects of Automated Transcription Quality on Non-native Speakers’ Comprehension in Real-time Computer-mediated Communication
Yingxin Pan, IBM Research, China
Danning Jiang, IBM Research-China, USA
Lin Yao, Chinese Academy Institute, China
Michael Picheny, IBM Research-Watson, USA
Yong Qin, IBM Research, China
Experimental studies investigating the use of automated speech recognition (ASR) in computer-mediated communication to improve non-native speakers’ comprehension. Reveals user-centered benchmarks at the current cutting edge of ASR technology.

I NEED YOUR INPUT
SESSION CHAIR: Roel Vertegaal, Queens University Ontario
alt.chi | Tangible Interfaces for Download: Initial Observations from Users’ Everyday Environments
Enrico Costanza, EPFL Media and Design Lab, Switzerland & University of Southampton, UK
Matteo Giaccone, EPFL Media and Design Lab, Switzerland & WeLaika, Italy
Olivier Kueng, EPFL Media and Design Lab, Switzerland
Simon Shelley, TU Eindhoven, The Netherlands
Jeffrey Huang, EPFL Media and Design Lab, Switzerland

alt.chi | Tangible Video Bubbles
Kimiko Ryokai, University of California at Berkeley, USA
Hayes Raffle, Hiroshii Horii, Nokia Research Center Palo Alto, USA
Yotam Mann, University of California at Berkeley, USA

alt.chi | Adaptive Mouse: A Deformable Computer Mouse Achieving Form-Function Synchronization
Sheng Kai Tang, Mechanical & Industrial Design Center, ASUSTek Computer Inc., Taiwan
Wen Yen Tang, Kun Shan University, Taiwan

alt.chi | Manual Deskterity: An Exploration of Simultaneous Pen + Touch Direct Input
Ken Hinckley, Microsoft Research, USA
Koji Yatani, Microsoft Research, USA & University of Toronto, Canada
Michel Pahud, Microsoft Research, USA
Nicole Coddington, Jenny Rodenhouse, Microsoft Corporation, USA
Hrvoje Benko, Andy Wilson, Bill Buxton, Microsoft Research, USA
alt.chi | Planz to Put Our Digital Information in its Place
William Jones, Dawei Hou, University of Washington, USA
Bhuricha Deen Sethanandha, Portland State University, USA
Eric Sheng Bi, University of Washington, USA
Jim Gemmell, Microsoft Research, USA

alt.chi | Only One Fitts’ Law Formula - Please!
Heiko Drewes, University of Munich, Germany

PAPER/NOTES | HANOVER FG

DEVISING INPUT
SESSION CHAIR: Jan Borchers, University of Aachen

NOTE | Comparing User Performance with Single-Finger, Whole-Hand, and Hybrid Pointing Devices
Xiang Cao, Nicolas Villar, Shahram Izadi, Microsoft Research
Cambridge, UK

We experimentally compared single-finger and whole-hand pointing devices with hybrid devices that combined the movement of both, and showed hybrid devices can potentially improve pointing performance especially for precise pointing.

PAPER | How Users Manipulate Deformable Displays as Input Devices
Sang-Su Lee, Sohyun Kim, Bopil Jin, Eunji Choi, Boa Kim,
Xu Jia, Daeep Kim, Kun-pyo Lee, KAIST, Korea

This user study is aimed at understanding deformation-based user gestures without considering current technical limitations by observing users interacting with artificial deformable displays with various levels of flexibility.

NOTE | Cord Input: An Intuitive, High-Accuracy, Multi-Degree-of-Freedom Input Method for Mobile Devices
Julia Schwarz, Chris Harrison, Scott Hudson, Jennifer Mankoff,
Carnegie Mellon University, USA

We present a cord-based sensor which senses along three input dimensions. This device could be integrated into headphones, backpacks, and clothing to control mobile devices in an eyes-free manner.

NOTE | Minput: Enabling Interaction on Small Mobile Devices with High-Precision, Low-Cost, Multipoint Optical Tracking
Chris Harrison, Scott E. Hudson, Human-Computer Interaction Institute, Carnegie Mellon University, USA

Minput is a sensing and input method that enables intuitive and accurate interaction on small devices, ones too small for practical touchscreen use and with limited space for physical buttons.

SPECIAL INTEREST GROUP | CHICAGO ABC

CREATING PROSOCIAL MEDIA FOR CHILDREN
ORGANIZERS:
Glenda Revelle, University of Arkansas, USA
Ashley Fenwick-Naditch, Sesame Workshop, USA
Liz Kronenberger, Xeko, USA
Makeda Mays Green, Sesame Workshop, USA
PAPERS | CENTENNIAL 1

MEDICAL DATA

SESSION CHAIR: John Canny, University of California Berkeley

PAPER | Physician-Driven Management of Patient Progress Notes in an Intensive Care Unit

Lauren Wilcox, Columbia University & IBM Watson, USA
Jie Lu, Jennifer Lai, IBM Watson, USA
Steven Feiner, Desmond Jordan, Columbia University, USA

Our multi-phase design process explored techniques for inserting and managing progress note content. We gained preliminary confirmation that tagging and note-driven information retrieval are desired by physicians in two ICUs.

PAPER | Mobile-izing Health Workers in Rural India

Divya Ramachandran, John Canny, University of California at Berkeley, USA
Prabhu Dutta Das, Dhirubhai Ambani Institute of Information and Communications Technology, India
Edward Cutrell, Microsoft Research India, India

Rural health workers face challenges in effectively performing their responsibilities. We evaluate the use of mobile videos to motivate health workers to persuade their clients to utilize health services.

PAPER | “Who’s Scribing?” Documenting Patient Encounter during Trauma Resuscitation

Aleksandra Sarcevic, Rutgers University, USA

Observational study in a trauma center revealed limitations of the documentation process and highlighted roles of the nurse recorder. Challenges to transforming paper-based documentation practices into digital ones are discussed.

PAPERS/NOTES | CENTENNIAL 3

EARTH, WIND, AND FLYER

SESSION CHAIR: Gilbert Cockton, Northumbria University

PAPER | UpStream: Motivating Water Conservation with Low-Cost Water Flow Sensing and Persuasive Displays

Stacey Kuznetsov, Eric Paulos, Carnegie Mellon University, USA

We explore the design and deployment of pervasive displays as an approach for promoting sustainable water use and health practices in public and private spaces.

PAPER | inAir: Sharing Indoor Air Quality Measurements and Visualizations

Sunyoung Kim, Eric Paulos, Carnegie Mellon University, USA

Describes a tool for sharing measurements and visualizations of indoor air quality within one’s social network to increase awareness and to promote behavioral changes for improved air quality, and to demonstrate the persuasive power of sharing

NOTE | Exploring Sustainable Design with Reusable Paper

Julie Wagner, LRI & INRIA, France
Wendy E. Mackay, INRIA, France

After investigating users’ printing behavior, we explored how reusable paper can support sustainable design. We found that users often need an intermediate state between electronic and physical forms of paper.

NOTE | Finding the Lost Treasure: Understanding Reuse of Used Computing Devices

Jina Huh, Kevin Nam, Nikhil Sharma, University of Michigan, USA

This paper contributes to sustainable interaction design, more specifically, reuse, by understanding adoption practices of old PDAs in ebay users.

PAPERS/NOTES | CENTENNIAL 4

SOCIAL MEDIA USERS

SESSION CHAIR: Laura Dabbish, Carnegie Mellon University

NOTE | Social Network Activity and Social Well-Being

Moira Burke, Carnegie Mellon University, USA
Cameron Marlow, Thomas Lento, Facebook, USA

An empirical analysis of the relationship between direct and passive communication on Facebook and social well-being, including loneliness, bridging, and bonding social capital.
NOTE | Predicting Influence in an Online Community of Creators
Elisabeth Sylvan, TERC, USA
Introduces and frames the concept of Online Communities of Creators (social networks for sharing personal, original work.) Reports on factors that predict two distinct constructs: project influence and social influence.

PAPER | Lurking? Cyclopaths?
A Quantitative Lifecycle Analysis of User Behavior in a Geowiki
Katherine Panciera, Reid Priedhorsky, University of Minnesota, USA
Thomas Erickson, IBM, USA
Loren Terveen, University of Minnesota, USA
Presents data analysis from a geowiki (Cyclopath) of user lifecycles, including pre-registration activity. Explores parallels with other open-content systems as well as design implications.

PAPER | Motivations to Participate in Online Communities
Cliff Lampe, Rick Wash, Alcides Velasquez, Elif Ozkaya, Michigan State University, USA
Compares individual versus group motivations of both anonymous and registered users to participate in an online community. Provides survey and server data to show how motivations affects participation.

CASE STUDY | Factors Impeding Wiki Use in the Enterprise: A Case Study
Lester Holtzblatt, Laurie Damianos, Daniel Weiss, MITRE Corporation, USA
The benefits organizations derive from wikis ultimately depend on user adoption. Our research identifies factors that impede wiki use in the enterprise and proposes strategies which address these barriers.

NOTE | Motivating Expressive Writing with a Text-to-Sound Application
Amy Gonzales, Tiffany Ng, OJ Zhao, Geri Gay, Cornell University, USA
The study finds that a system that translates expressive writing text into music increases enjoyment and may motivate expressive writing, which is linked to improvements in mental and physical health.

NOTE | Artificial Subtle Expressions: Intuitive Notification Methodology of Artifacts
Takanori Komatsu, Shinshu University, Japan
Seiji Yamada, National Institute of Informatics, Japan
Kazuki Kobayashi, Shinshu University, Japan
Kotaro Funakoshi, Mikio Nakano, HRIJ, Japan
Artificial subtle expressions (ASEs), simple and low-cost expressions like beeping sounds or blinking LEDs, could convey the internal states of artifacts to users like paralinguistic or nonverbal information.

PAPER | SoundNet: Investigating a Language Composed of Environmental Sounds
Xiaojuan Ma, Christiane Fellbaum, Perry Cook, Princeton University, USA
This paper explores the efficacy of environmental sounds for conveying concepts to assist communication across language barriers. Details, issues, and results of online studies employing anonymous human participants are presented.
**BIKES AND BUSES**

**SESSION CHAIR:** Duncan Rowland, University of Nottingham

**PAPER | Understanding the space for co-design in riders’ interactions with a transit service**

Daisy Yoo, John Zimmerman, Aaron Steinfeld, Anthony Tomasic, Carnegie Mellon University, USA

The project explores the key challenges of creating co-design of public services using web 2.0. Investigating the service of local public transit, we integrate service design methods with HCI.

**PAPER | OneBusAway: Results from Providing Real-Time Arrival Information for Public Transit**

Brian Ferris, Kari Watkins, Alan Borning, University of Washington, USA

Describes OneBusAway, which provides real-time transit arrival information, particularly on mobile devices. Presents survey results showing positive effects on user satisfaction, waiting time, transit usage, feelings of safety, and walking.

**NOTE | Biketastic: Sensing and Mapping for Better Biking**

Sasank Reddy, Katie Shilton, Gleb Denisov, Christian CenizaL, Deborah Estrin, Mani Srivastava, University of California at Los Angeles, USA

Describes a mobile phone platform that enables individuals to log geo-data about their bike routes. Presents visualization techniques and inference algorithms to enhance browsing and learning from routes.

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**IMAGINE ALL THE PEOPLE**

**SESSION CHAIR:** Tovi Grossman, Autodesk Research

**alt.chi | Edits & Credits: Exploring Integration and Attribution in Online Creative Collaboration**

Kurt Luther, Georgia Institute of Technology, USA
Nicholas Diakopoulos, Rutgers University, USA
Amy Bruckman, Georgia Institute of Technology, USA

**alt.chi | Multi-lifespan Information System Design in Post-Conflict Societies: An Evolving Project in Rwanda**

Batya Friedman, University of Washington, USA
Lisa P. Nathan, University of British Columbia, Canada
Milli Lake, Nell Carden Grey, Trond T. Nilsen, University of Washington, USA
Robert F. Utter, Elizabeth J. Utter, USA
Mark Ring, University of Washington, USA
Zoe Kahn, Roosevelt High School, USA

**alt.chi | Cross Currents: Water Scarcity and Sustainable CHI**

Tad Hirsch, Ken Anderson, Intel labs, USA

**Connect 2 Congress: Visual Analytics for Civic Oversight**

Peter Kinnaird, Mario Romero, Gregory Abowd, Georgia Institute of Technology, USA

**alt.chi | Who are the Crowdworkers? Shifting Demographics in Mechanical Turk**

Joel Ross, Lilly Irani, M. Six Silberman, Andrew Zaldivar, Bill Tomlinson, University of California at Irvine, USA

**alt.chi | Public Issues on Projected User Interface**

Ju-Chun Ko, Li-Wei Chan, Yi-Ping Hung, National Taiwan University, Graduate Institute of Networking and Multimedia, Taiwan

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**DEATH AND FEAR**

**SESSION CHAIR:** Janet Vertesi, University of California Irvine

**PAPER | A Death in the Family: Opportunities for Designing Technologies for the Bereaved**

Michael Massimi, Ronald M. Baecker, University of Toronto, Canada

Presents a web survey and interview study of the how bereaved people inherit and use personal technologies. Identifies design directions and opportunities for this population.
PAPER | Passing On & Putting To Rest: Understanding Bereavement in the Context of Interactive Technologies

William Odom, Carnegie Mellon University, USA
Richard Harper, Abigail Sellen, Microsoft Research Cambridge, UK
David Kirk, University of Nottingham, UK
Richard Banks, Microsoft Research Cambridge, UK

We report field evidence from interviews with bereaved participants and discuss how the HCI design space might be better sensitized to the social processes that unfold when bereavement occurs.

PAPER | Fear and the City - Role of Mobile Services in Harnessing Safety and Security in Urban Use Contexts

Jan Blom, Nokia Research Center, Lausanne, Switzerland
Divya Viswanathan, Nokia Research Center, Bangalore, India
Janet Go, Mirjana Spasojevic, Nokia Research Center, Palo Alto, USA
Karthikeya Acharya, Robert Ahonius, Nokia Research Center, Bangalore, India

This paper describes research focusing on perception of fear in urban context. Through presenting security service concept, it also acknowledges the potential of mobile services in reducing such feelings.

SPECIAL INTEREST GROUP | CHICAGO ABC

END USER SOFTWARE ENGINEERING: CHI 2010 SPECIAL INTEREST GROUP MEETING

ORGANIZERS:
Brad Myers, Carnegie Mellon University, USA
Margaret Burnett, Oregon State University, USA
Andrew Ko, University of Washington, USA
Mary Beth Rosson, Pennsylvania State University, USA
Christopher Scaffidi, Oregon State University, USA
Susan Wiedenbeck, Drexel University, USA
REMEMBER AND REFLECT
SESSION CHAIR: Kristina Höök, SICS

PAPER | Pensieve: Supporting Everyday Reminiscence
S. Tejaswi Peesapati, Victoria Schwanda, Johnathon Schultz, Matt Lepage, So-yea Jeong, Dan Cosley, Cornell University, USA

Presents a design rationale, two systems for supporting reminiscence using social media, and a successful five-month, 160 person field deployment that illuminates design and research issues around technology and reminiscence.

NOTE | Involving Reflective Users in Design
Paula M. Bach, Michael Twidale, University of Illinois, USA

NOTE | Designing Games for Learning: Insights from Conversations with Designers
Katherine Isbister, NYU-Poly, USA
Mary Flanagan, Dartmouth College, USA
Chelsea Hash, NYU-Poly, USA

This paper presents insights about designing effective and fun games for learning, gleaned from interviews with experienced game developers. Results may be of interest to designers of game-like experiences, also.

PAPER | Now Let Me See Where I Was: Understanding How Lifelogs Mediate Memory
Vaiva Kalnikaite, The University of Sheffield, UK
Abigail Sellen, Microsoft Research Cambridge, UK
Steve Whittaker, IBM Research Almaden, USA
David Kirk, The University of Nottingham, UK

A field study examining how and why different types of Lifelogs help remember past events or in contrast, support inferential processing in memory. Can assist in developing effective memory aids.

PAPER | The Prayer Companion: Openness and Specificity, Materiality and Spirituality
William Gaver, Goldsmiths, University of London, UK
Mark Blythe, University of York, UK
Andy Boucher, Goldsmiths, University of London, UK
Nadine Jarvis, John Bowers, Goldsmiths, University of London, UK
Peter Wright, Sheffield Hallam University, UK

Describes the design and long-term deployment of a networked device that provides resources for cloistered nuns’ prayers. Illustrates general issues for interaction design, applied here to older people and spirituality.

HOME ECO BEHAVIOR
SESSION CHAIR: Eli Blevis, Indiana University-Bloomington

PAPER | Home, Habits, and Energy: Examining Domestic Interactions and Energy Consumption
James Pierce, Palo Alto Research Center (PARC) & HCI Institute, Carnegie Mellon University, USA
Diane J. Schiano, Search and Advertising Metrics & Analysis (SAMA) & Yahoo!, Inc. & Palo Alto Research Center (PARC), USA
Eric Paulos, HCI Institute, Carnegie Mellon University, USA

Qualitative study of domestic interactions with energy-consuming products and systems. Contributes a framework and strategies informing the design of more energy-conserving interactions as a matter of sustainable interaction design.

NOTE | Studying Always-On Electricity Feedback in the Home
Yann Riche, Riche Design, USA
Jonathan Dodge, Ronald A. Metoyer, Oregon State University, USA

We present participatory design studies and resulting implications for an always-on feedback device intended to inform consumers of their electricity consumption habits and enable sustainable consumption behavior change.

PAPER | The Design of Eco-Feedback Technology
Jon Froehlich, Leah Findlater, James Landay, University of Washington, USA

Eco-feedback technology extends back to the origins of environmental psychology. This paper surveys HCI and environmental psychology literature to define the role of HCI in designing and evaluating eco-feedback technology.

SHARING IN SPECIFIC COMMUNITIES
SESSION CHAIR: Jofish Kaye, Nokia

PAPER | The Prayer Companion: Openness and Specificity, Materiality and Spirituality
William Gaver, Goldsmiths, University of London, UK
Mark Blythe, University of York, UK
Andy Boucher, Goldsmiths, University of London, UK
Nadine Jarvis, John Bowers, Goldsmiths, University of London, UK
Peter Wright, Sheffield Hallam University, UK

Describes the design and long-term deployment of a networked device that provides resources for cloistered nuns’ prayers. Illustrates general issues for interaction design, applied here to older people and spirituality.
PAPER | What’s Your Idea? A Case Study of a Grassroots Innovation Pipeline within a Large Software Company

Brian Bailey, University of Illinois & Microsoft Research, USA
Eric Horvitz, Microsoft Research, USA

Provides recommendations and insights for improving the design of idea management systems and execution of grassroots innovation pipelines within large organizations.

NOTE | ASL-STEM Forum: Enabling Sign Language to Grow Through Online Collaboration

Anna C. Cavender, Daniel S. Otero, University of Washington, USA
Jeffrey P. Bigham, University of Rochester, USA
Richard E. Ladner, University of Washington, USA

ASL-STEM Forum is an online, collaborative, video forum for sharing and discussing ASL signs. Initial studies show viability and lessons in accommodating varying user types, from lurkers to advanced contributors.

NOTE | Curator: A Game with a Purpose for Collection Recommendation

Greg Walsh, Jennifer Golbeck, University of Maryland, USA

Curator is a game with a purpose that supports gathering information about collections of items that work well together. Presents a prototype game and discusses applications to collection recommender systems.

NOTE | Evaluation of Text Entry Methods for Korean Mobile Phones, a User Study

Ivaylo Ilinkin, Sunghee Kim, Gettysburg College, USA

This paper reports an evaluation of Korean text entry methods for mobile-phones based on KSPC, WPM, and error rate. A phrase set that has high correlation with Korean is introduced.

CASE STUDY | Contacts 3.0: Bringing together research and design teams to reinvent the phonebook

Frank Bentley, Motorola Applied Research, USA
Rafiq Ahmed, JoEllen Kames, Lauren Schwendimann, Rhiannon Zivin, Motorola Mobile Devices, USA

This Case Study explores a joint project between research and product teams to create a social network-enabled mobile contacts platform. Can provide suggestions for successful corporate research transfer.

PAPER | Mobile Taskflow in Context: A Screenshot Study of Smartphone Usage

Amy K. Karlson, Shamsi T. Iqbal, Brian Meyers, Microsoft Research, USA
Gonzalo Ramos, Kathy Lee, Microsoft, USA
John C. Tang, Microsoft Research, USA

Characterizes barriers in task completion that mobile device users encounter. We provide findings and design recommendations from a large scale survey and focused diary study for improving mobile taskflow.

NOTE | An Adaptive Speed-Call List Algorithm and Its Evaluation with ESM

Seunghwan Lee, Jungsuik Seo, Geehyuk Lee, Korea Advanced Institute of Science and Technology, Korea

Describes an algorithm for generating a speed-call list based on temporal calling patterns that was motivated by user survey, validated by unseen call logs, and evaluated by an ESM study.

NOTE | Modeling Dwell-Based Eye Pointing Target Acquisition

Xinyong Zhang, Renmin University of China, Peking University, Beijing Institute of Technology, China
Xiangshi Ren, Kochi University of Technology, Japan
Hongbin Zha, Peking University, China

Contributes a quantitative model for eye pointing using dwell time. Provides some implications for the designs of gaze input interfaces and a means for the comparison of gaze input devices.

PAPER | Gazemarks - Gaze-Based Visual Placeholders to Ease Attention Switching

Dagmar Kern, University of Duisburg-Essen, Germany
Paul Marshall, Open University, UK
Albrecht Schmidt, University of Duisburg-Essen, Germany

Gazemarks are visual placeholders generated from eye tracking data and designed to aid attention switching. We explore different design parameters, and demonstrate their potential through a user study.
PAPER | Knowing Where and When to Look in a Time-Critical Multimodal Dual Task

Anthony J. Hornof, Yunfeng Zhang, Tim Halverson, University of Oregon, USA

Describes a dual-task experiment that explores people’s ability to integrate perceptual and motor processing across tasks. Demonstrates how eye tracking data can be used to reveal effective multitasking strategies.

PAPERS | REGENCY 7

THERAPY AND REHABILITATION

SESSION CHAIR: Amy Hurst, Carnegie Mellon University

PAPER | Towards Customizable Games for Stroke Rehabilitation

Gazihan Alankus, Washington University in St. Louis, USA
Amanda Lazar, University of California at San Diego, USA
Matt May, Caitlin Kelleher, Washington University in St. Louis, USA

Our study demonstrates effective use of Wii remotes and webcams in games for stroke rehabilitation and how to design games that can be customized for patients with different recovery levels.

PAPER | Designing Patient-Centric Information Displays for Hospitals

Lauren Wilcox, Columbia University, USA
Dan Morris, Desney Tan, Microsoft Research, USA
Justin Gatewood, Washington Hospital Center, USA

We assembled prototype in-room, patient-centric information displays using EMR data. We present the design of our prototypes and findings from a formative study conducted in an emergency department.

PAPER | Supporting Sandtray Therapy on an Interactive Tabletop

Mark Hancock, University of Calgary, Canada
Thomas ten Cate, University of Groningen, The Netherlands
Sheelagh Carpendale, University of Calgary, Canada
Tobias Isenberg, University of Groningen, The Netherlands

Cooperative design of a 3D tabletop display application for use in sandtray therapy - a form of art therapy. Can improve child therapy and inform 3D tabletop display interaction design.

INVITED DESIGN ACTIVITY | HANOVER CDE

PACHUBE DESIGN ACTIVITY – A DESIGN ACTIVITY WITH MANY HANDS

Pachube [http://www.pachube.com/] is a platform that enables you to store, share and discover realtime sensor, energy and environment data from objects, devices and buildings around the world, facilitating interaction between remote environments, both physical and virtual. In this 90-minute collaborative design activity, Usman Haque, Pachube creator, will be giving a basic introduction to Pachube and then leading a collaborative design activity to show how data from around the world (and from the person next to you) can be quickly shared, modeled, and applied. Time permitting, we will be having a short discussion about the potential applications for connect-sites, like Pachube, and what impact they might have on HCI discourse. This session is part of the CHI Design Community’s series of events this year, focused on the contemporary confluence of data and design.

TOCHI | HANOVER FG

ACTIVITIES, ACCESS CONTROL & NETWORKING

SESSION CHAIR: Susanne Bodker, University of Aarhus

TOCHI | Activity-Based Computing for Medical Work in Hospitals

Jakob Bardram, IT University of Copenhagen, Denmark

Presents a new paradigm for human-computer interaction based on human activity and its application in a hospital environment. Can help design new classes of interaction technology and clinical applications.

TOCHI | Computer Supported Access Control

Gunnar Stevens, University of Siegen, Germany
Volker Wulf, University of Siegen and Fraunhofer FIT, Germany

We reconceptualize the issue of access control on a theoretical, methodological and practical level. As a result, we enhance the design space of technical mechanisms of access control.

TOCHI | Experiences with Recombinant Computing: Exploring Ad Hoc Interoperability in Evolving Networks

W. Keith Edwards, Georgia Institute of Technology, USA
Mark Newman, University of Michigan, USA
Jana Sedivy, Trevor Smith, Palo Alto Research Center, USA

We describe the Obje/Speakeasy interoperability framework, including its novel approach to facilitating interoperation and well as its impact on the user experience.
TOCHI | The Ins and Outs of Home Networking: The Case for Useful and Usable Domestic Networking

Rebecca E. Grinter, W. Keith Edwards, Marshini Chetty, Erika Shehan Poole, Ja-Young Sung, Jeonghwa Yang, Georgia Institute of Technology, USA
Andy Crabtree, Peter Tolmie, Tom Rodden, Chris Greenhalgh, Steve Benford, University of Nottingham, UK

Empirical studies of home networking and design implications that highlight how network solutions are not only technically challenging but must also fit in with the social organization of the household.

SPECIAL INTEREST GROUP | CHICAGO ABC

DESIGNING USER INTERFACES FOR MULTI-TOUCH AND SURFACE-GESTURE DEVICES

ORGANIZERS:
Daniel Wigdor, Microsoft, USA
Gerald Morrison, Smart Technologies, Canada
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### Special Events
- **Exhibits & Info Booth:** 10:30–14:30
- **Media Showcase Interactivity Demos:** 10:00–11:30
- **Spotlight on Doctoral Consortium Posters:** 10:30–11:30
- **Media Showcase Performances:** 11:30–13:00
CHI MADNESS | CENTENNIAL 2
8:00-8:45
SESSION CHAIRS:
Mira Dontcheva, Adobe Systems
Matt Jones, Swansea University
Max L. Wilson, Swansea University
CHI Madness, now in its fifth year, returns to give everyone a lightning speed overview of the day’s program.

INVITED DESIGN SPEAKER | CENTENNIAL 2

SPEAKER: Usman Haque, Architecture, Interaction Systems
As the Director of Haque Design + Research Ltd. (http://www.haque.co.uk/), Usman Haque has pulled together issues of data, kinetics, collaboration, architecture, and communication. His work brings together various areas of contemporary design practice; bringing interaction in touch with information, combining kinetics with collaboration, and tying the architectonic to the technologic. Each of his projects touches a range of disciplines — and often brushes the sky. He argues that contemporary “technologies alter our understanding of space and change the way we relate to each other. We no longer think of architecture as static and immutable; instead we see it as dynamic, responsive and conversant.” Like the fabled Alice, Mr. Haque found a doorway where before there was only cold reflection. Join us this morning to get a look at what Mr. Haque found on the other side.

PAPERS/NOTE | CENTENNIAL 1

EVERYDAY GESTURES
SESSION CHAIR: Michael Rohs, Deutsche Telekom Laboratories

PAPER | MAGIC: A Motion Gesture Design Tool
Daniel Ashbrook, Georgia Tech & Nokia Research Center Hollywood, USA
Thad Starner, Georgia Tech, USA
A system to help designers create motion gestures that won’t be confused with peoples’ everyday motions. Presents results of study and gesturing techniques invented by users to control audio player.

NOTE | Protractor: A Fast and Accurate Gesture Recognizer
Yang Li, Google, USA
Describes a template-based gesture recognizer that employs a novel approach for measuring gesture similarity, covers rich gesture variation and leads to significant performance improvements; can run efficiently on mobile devices.

PAPER | GesText: Accelerometer-Based Gestural Text-Entry Systems
Eleanor Jones, Jason Alexander, Andreas Andreou, University of Bristol, UK
Pourang Irani, University of Manitoba, Canada
Sriram Subramanian, University of Bristol, UK
A study of the factors influencing the design of accelerometer-based text-entry systems, incorporating a rich description of the design space, two pilot experiments and evaluations of two example text-entry interfaces.

PAPERS | CENTENNIAL 3

MULTITOUCH
SESSION CHAIR: Ben Bederson, University of Maryland

Paper | Multi-touch techniques for Exploring Large-Scale 3D Astrophysical Simulations
Chi-Wing Fu, Woon Boon Goh, Junxiang Allen Ng, Nanyang Technological University, Singapore
Multi-touch techniques that deliver an effective exploratory interface to navigate the unique features of large-scale 3D environments such as astrophysical simulations.

Paper | Graspables Revisited: Multi-Touch vs. Tangible Input for Tabletop Displays in Acquisition and Manipulation Tasks
Philip Tuddenham, University of Cambridge, UK
David Kirk, University of Nottingham, UK
Shahram Izadi, Microsoft Research Cambridge, UK
Describes experimental comparisons of multi-touch and TUI input techniques for target acquisition and manipulation tasks on interactive tabletops. Demonstrates and discusses potential benefits of TUIs for both tasks.

Paper | The Design and Evaluation of Multitouch Marking Menus
Julian Lepinski, Tovi Grossman, George Fitzmaurice, Autodesk Research, Canada
Describes the design and evaluation process behind multitouch marking menus, including an evaluation of chorded multitouch gestures. Multitouch marking menus show performance improvements over traditional hierarchical marking menus.
PAPERS/NOTES | CENTENNIAL 4

PERSPECTIVES ON DESIGN

SESSION CHAIR: Celine Latulipe, University of North Carolina

NOTE | Multi-lifespan Information System Design: A Research Initiative for the HCI Community

Batya Friedman, University of Washington, USA
Lisa P. Nathan, University of British Columbia, Canada

Proposes a new research initiative for the HCI community: multi-lifespan information system design. Examines key opportunities, roles, and challenges for interaction design to contribute longer-term solutions to significant real-world problems.

PAPER | Designing Interactivity in Media Interfaces: A Communications Perspective

S. Shyam Sundar, Qian Xu, Saraswathi Bellur, Penn State University, USA

Identifies design challenges for enhancing user experience, based on concepts emerging from three species of interactivity—source, medium and message elements. Describes psychological outcomes and user engagement with interactive interfaces.

PAPER | Designing with Interactive Example Gallerie

Brian Lee, Savil Srivastava, Ranjitha Kumar, Ronen Brafman, Scott R. Klemmer, Stanford University, USA

Presents an interface for designing web pages with interactive example galleries. Describes three studies finding that independent raters prefer designs created with the aid of examples.

PAPERS | REGENCY 5

PUBLIC DISPLAYS

SESSION CHAIR: Elaine Huang, University of Calgary

PAPER | Worlds of Information: Designing for Engagement at a Public Multi-Touch Display

Giulio Jacucci, Ann Morrison, Helsinki Institute for Information Technology HIIT & Aalto University, Finland
Gabriela T. Richard, New York University, USA
Jari Klemola, Peter Peltonen, Helsinki Institute for Information Technology HIIT & Aalto University, Finland
Lorenza Parisi, Sapienza Università di Roma, Italy
Toni Laitinen, Helsinki Institute for Information Technology HIIT & Aalto University, Finland

Worlds of Information are multi-touch 3D widgets that unfold and provide parallel access to diverse content. In a field trial users effectively interacted in parallel and reported engaging experiences.

PAPER | Designing Urban Media Façades: Cases and Challenges

Peter Dalsgaard, Kim Halskov, Aarhus University, Centre for Digital Urban Living, Denmark

Based on five cases we discuss eight challenges faced when designing urban media façades. The challenges concern: interfaces, physical integration, robustness, content, stakeholders, situation, social relations, and emerging use.

PAPER | Touch Projector: Mobile Interaction through Video

Sebastian Boring, Dominikus Baur, Andreas Butz, University of Munich, Germany
Sean Gustafson, Patrick Baudisch, Hasso Plattner Institute, Germany

Touch Projector is a mobile application that allows manipulating content on distant displays through live video. We present improvements for mobile use - zooming and temporarily freezing the video image.

PAPERS | REGENCY 6

SENSING

SESSION CHAIR: Albrecht Schmidt, University Duisburg-Essen

PAPER | High Accuracy Position and Orientation Detection in Two-Dimensional Communication Network

Kei Nakatsuma, Hiroyuki Shinoda, The University of Tokyo, Japan

Describes a method and a prototyping for a novel position and orientation detection of devices in Two-Dimensional Communication networks.

PAPER | Rethinking RFID: Awareness and Control For Interaction With RFID Systems

Nicola Marquardt, University of Calgary, Canada
Alex S. Taylor, Nicolas Villar, Microsoft Research Cambridge, UK
Saul Greenberg, University of Calgary, Canada

Describes novel RFID tags providing reader awareness and information control. These tags give people control over RFID, a technology that is usually experienced passively and often operates invisibly.
PAPER | SensorTune: a Mobile Auditory Interface for DIY Wireless Sensor Networks

Enrico Costanza, ECS School, University of Southampton, UK
Jaques Panchard, Itercor - IT Governance, Geneva, Switzerland
Guillaume Zufferey, EPFL, Switzerland
Julien Nembrini, Constructive and Structural Design Lab, UdK Berlin, Germany
Julien Freudiger, Jeffrey Huang, Jean-Pierre Hubaux, EPFL, Switzerland

SensorTune uses non-speech audio to support users in setting up Wireless Sensor Networks. In a user study (N=20) it outperformed a comparable GUI for task completion time and users' preference.

PAPERS/NOTE/CASE STUDY | REGENCY 7

USABILITY METHODS AND NEW DOMAINS
SESSION CHAIR: Youn-kyung Lim, KAIST

PAPER | API Usability Peer Reviews: A Method for Evaluating the Usability of Application Programming Interfaces

Umer Farooq, Leon Welicki, Dieter Zirkler, Microsoft, USA

We describe a new usability inspection method to evaluate APIs. Our method is significantly more efficient (16x) than standard API usability tests in the lab.

PAPER | Understanding Usability Practices in Complex Domains

Parmit K. Chilana, Jacob O. Wobbrock, Andrew J. Ko, University of Washington, USA

Presents empirical data from interviews with usability professionals on the challenges of working in complex domains and the coping strategies used. Discusses implications of the results for usability training.

NOTE | Average Task Times in Usability Tests: What to Report?

Jeff Sauro, Oracle, Measuring Usability LLC, USA

James Lewis, IBM, USA

Monte Carlo simulations from 61 usability tasks show that the geometric mean provides a more accurate estimate of the average task-time than the median and mean in small sample (n<25) test.

CASE STUDY | Concept Mapping in Agile Usability: A Case Study

Jeremy T. Barksdale, Scott McCrickard, Virginia Tech, USA

This study presents a collaborative concept mapping approach that allows for greater application of HCI methods and more usable software through the removal of project team barriers.

PAPERS | HANOVER CDE

HCI IN CHINA
SESSION CHAIR: John Thomas, IBM

PAPER | Predicting Chinese Text Entry Speeds on Mobile Phones

Ying Liu, Nokia Research Center, China
Kari-Jouko Räihä, University of Tampere, Finland

The paper presents a predictive model (integrating Fitts' law, language model, KLM and a linear model) on users' error free speeds with Chinese text entry methods on mobile phones.

PAPER | Chinese Online Communities: Balancing Management Control and Individual Autonomy

Qinying Liao, Yingxin Pan, Michelle X. Zhou, Fei Ma, IBM Research, China

We present findings of three related studies on understanding the governance practices of online social communities in China and their comparison to those in the United States.

PAPER | How Socio-Economic Structure Influences Rural Users’ Acceptance of Mobile Entertainment

Jun Liu, Tsinghua University, China
Ying Liu, Nokia Research Center, China
Pei-Luen Patrick Rau, Hui Li, Tsinghua University, China
Xia Wang, Nokia Research Center, China
Dingjun Li, Tsinghua University, China

Describes a quantitative comparative study of factors influencing technology acceptance in two populations in rural China. Can assist practitioners in understanding the influence of socio-economic situation on user’s needs.

PAPERS | HANOVER FG

WE ARE FAMILY
SESSION CHAIR: Steve Harrison, Virginia Tech

Paper | Designing a Technological Playground: A Field Study of the Emergence of Play in Household Messaging

Siân E. Lindley, Richard Harper, Abigail Sellen, Microsoft Research Cambridge, UK

Describes a field study of a home messaging device. Details four categories of playful practices that emerged, links them to a theoretical account, and draws implications for designing for play.
PAPER | The Family Window: The Design and Evaluation of a Domestic Media Space

Tejinder K. Judge, Virginia Tech, USA
Carman Neustaedter, Andrew F. Kurtz, Kodak Research Labs, USA

A study about the use of a domestic media space with always-on video. Results can inform the design of future domestic communication and awareness technologies.

PAPER | FM Radio: Family Interplay with Sonic Mementos

Daniela Petrelli, University of Sheffield, UK
Nicolas Villar, Microsoft Research, UK
Vaiva Kalnikaite, University of Sheffield, UK
Lina Dib, Rice University, USA
Steve Whittaker, University of Sheffield, UK

Based on fieldwork with families, we designed the Family Memory Radio to embody sonic digital mementos of past holidays. We describe how we encased technology into an old fashion shell.

SPECIAL INTEREST GROUP | CHICAGO ABC

CONTEXTUAL USER EXPERIENCE: HOW TO REFLECT IT IN INTERACTION DESIGNS?

ORGANIZERS:
Manfred Tscheligi, Marianna Obrist, University of Salzburg - ICT&S, Austria
Boris de Ruyter, Philips Research Europe, The Netherlands
Albrecht Schmidt, University of Duisburg-Essen, Germany
Thursday | Mid-Morning | 11:30—13:00

**PAPERS | CENTENNIAL 1**

**DISPLAYS WHERE YOU LEAST EXPECT THEM**

**SESSION CHAIR:** Chris Harrison, Carnegie Mellon University

**PAPER | LensMouse: Augmenting the Mouse with an Interactive Touch Display**

Xing Dong Yang, University of Alberta, Canada  
Edward Mak, David McCallum, Pourang Irani, University of Manitoba, Canada  
Xiang Cao, Shahram Izadi, Microsoft Research Cambridge, UK

Present LensMouse, a novel input device that augments a mouse with an interactive touch display. Demonstrate the benefits of the LensMouse via an experiment and present novel applications and interactions.

**PAPER | PACER: Fine-grained Interactive Paper via Camera-touch Hybrid Gestures on a Cell Phone**

Chunyuan Liao, Qiong Liu, Bee Liew, Lynn Wilcox, FXPAL, U.S.A.

Present an interactive paper system based on a cell phone interface with hybrid camera and touch input. Support gesture-based interaction with fine-grained document content on paper.

**PAPER | MouseLight: Bimanual Interaction on Digital Paper using a Pen and a Spatially-Aware Mobile Projector**

Hyunyoung Song, University of Maryland, USA  
Francois Guimbretiere, Cornell University, USA  
Tovi Grossman, George Fitzmaurice, Autodesk Research, Canada

Presents a novel augmented reality system that enhances a paper surface with virtual content and executes instructions by way of a digital pen.

**INVITED DESIGN PANEL | CENTENNIAL 2**

**DATA AND INFORMATION IN THE PALM OF OUR HANDS**

What happens when information is ubiquitous? Who will own the data that we produce? How will we make sense of it? How would our everyday lives change if data-centric became a way of life? How is Design effected by this radical transformation? What can Design do to respond to this transformation? Clearly we’ve got questions, and no simple answer will suffice - nor satisfy. This Design Panel will lead a discussion on the intricate complexities of ubiquitous information and try to unravel the role of Design in a world where all data and information is in the palm of our hands.

**PAPER/CASE STUDIES | CENTENNIAL 3**

**USERS AND ATTENTION ON THE WEB**

**SESSION CHAIR:** Jeffrey W. Nichols, Carnegie Mellon University

**PAPER | Enhancing Web Page Readability for Non-native Readers**

Chen-Hsiang Yu, Robert C. Miller, Massachusetts Institute of Technology, U.S.A.

We propose a new transformation method, Jenga Format, to enhance web page readability. The user study indicated that Jenga format improved reading comprehension without negatively affecting reading speed.

**CASE STUDY | The Mystique of Numbers: Belief in Quantitative Approaches to Segmentation and Persona Development**

David Siegel, Dray & Associates, Inc., USA

Case study exposing limitations of quantitative user segmentation and problems in evolving practice of segmentation and use of personas. Will help practitioners counteract excessive deference to quantitative user research.

**CASE STUDY | Automating UI Guidelines verification by leveraging pattern based UI and model based development**

Satya Viswanathan, Peters Johan Christiaan, SAP Labs, Germany

Case study describes an efficient process of embedding UI design guidelines into development environments to achieve higher UI consistencies in large scale software applications and making the development process faster.

**PAPERS | CENTENNIAL 4**

**DOMESTIC LIFE**

**SESSION CHAIR:** Dave Kirk, Nottingham University

**PAPER | How Routine Learners can Support Family Coordination**

Scott Davidoff, John Zimmerman, Anind K. Dey, Carnegie Mellon, USA

Offers a vision of how simple sensing could capture and model idiosyncratic routines, enabling applications to solve real problems. Focuses on augmenting calendars and reminder systems to improve family coordination.
PAPER | The Design and Evaluation of an End-User-Deployable, Whole House, Contactless Power Consumption Sensor

Shwetak N. Patel, Sidhant Gupta, University of Washington, USA
Matthew S. Reynolds, Duke University, USA

We present the design, development, and evaluation of an end-user installable, whole house power consumption sensing system capable of gathering accurate real-time power in the home.

PAPER | InPhase: Evaluation of a Communication System Focused on “Happy Coincidences” of Daily Behaviors

Hitomi Tsujita, Koji Tsukada, Itiro Siio, Ochanomizu University, Japan

A new method of communicating “happy coincidences” in daily activities between people separated by long distances. This system can enhance intimacy, closeness and privacy while reducing annoyance.

PAPER | Spyn: Augmenting the Creative and Communicative Potential of Craft

Daniela Rosner, Kimiko Ryokai, University of California Berkeley, USA

We present data collected from a field study of crafters and craft recipients introduced to Spyn — mobile phone software that associates digital records with locations on fabric.

PAPER | Toque: Designing a Cooking-Based Programming Language For and With Children

Sureyya Tarkan, Vibha Szawal, Allison Druin, Evan Golub, Elizabeth M. Bonsignore, Greg Walsh, University of Maryland, USA
Zeina Atrash, Northwestern University, USA

Presents implications from an intergenerational design process to create a cooking-based programming language utilizing a Wiimote. Can assist researchers, working in tangible systems, with teaching computational thinking to young children.

NOTE | Cooking with Robots: Designing a Household System Working in Open Environments

Yuta Sugiura, Keio University, Japan
Daisuke Sakamoto, The University of Tokyo, Japan
Anusha Withana, Masahiko Inami, Keio University, Japan
Takeo Igarashi, The University of Tokyo, Japan

We propose a cooking-with-robots system that operates in an open environment. The system incorporates robotic and human elements interoperating in a shared workspace as to achieve a rudimentary cooking capability.

PAPER | Code Bubbles: A Working Set-based Interface for Code Understanding and Maintenance

Andrew Bragdon, Robert Zeleznik, Suman Karumuri, Steven P. Reiss, Joshua Kaplan, William Cheung, Christopher Coleman, Ferdi Adeputra, Brown University, USA
Joseph J. LaViola Jr., University of Central Florida, USA

We propose a novel user interface metaphor for code understanding based on collections of lightweight, editable fragments called bubbles, which form concurrently visible working sets.

PAPER | How to Support Designers in Getting Hold of the Immaterial Material of Software

Fatih Kursat Ozenc, Miso Kim, John Zimmerman, Stephen Oney, Brad Myers, Carnegie Mellon University, USA

This work investigates features of future tools to support conceiving, refining, and communicating of interactive behaviors, which are challenging to grasp due to the ‘immaterial’ materiality of the digital domain.

CASE STUDY | “Fit and Finish” Using a Bug Tracking System - Challenges and Recommendations

Yossi Avnon, Scott L. Boggan, Microsoft, USA

Presents recommendations for efficiently managing UX “fit and finish” through a bug tracking system. Can assist in developing effective processes for enhancing UI quality throughout the development cycle.

Erica L. Olmsted-Hawala, Elizabeth D. Murphy, Sam Hawala, Kathleen T. Ashenfelter, U.S. Census Bureau, USA

Three think-aloud protocols: traditional, speech-communication, coaching were usability tested. Results show accuracy and satisfaction are significantly higher in the coaching condition. There were no significant differences with respect to efficiency.

NOTE | Powerful and consistent analysis of Likert-type rating scales

Maurits Kaptein, Eindhoven University of Technology, The Netherlands
Clifford Nass, Stanford University, USA
Panos Markopoulos, Eindhoven University of Technology, The Netherlands

Describes a nonparametric method to analyze data obtained from Likert-type scales in factorial experiments. The approach is invariant under monotone transformations. Accompanying website supports researchers in their analysis process.

NOTE | Measuring the User Experience on a Large Scale: User-Centered Metrics for Web Applications

Kerry Rodden, Hilary Hutchinson, Xin Fu, Google, USA

Introduces the HEART framework for large-scale metrics of user experience (Happiness, Engagement, Adoption, Retention, and Task success), and the Goals-Signals-Metrics definition process. Includes examples of real applications.

NOTE | Are your participants gaming the system? Screening Mechanical Turk Workers

Julie S. Downs, Mandy B. Holbrook, Steve Sheng, Lorrie Faith Cranor, Carnegie Mellon University, USA

A screening process to identify non-conscientious survey participants, tested in Amazon.com’s Mechanical Turk. Test qualification can be used to exclude problematic participants, who vary systematically in age, sex, and occupation.

NOTE | Trained to Accept? A Field Experiment on Consent Dialogs

Rainer Boehme, International Computer Science Institute Berkeley, USA
Stefan Koespe, Technische Universitaet Dresden, Germany

A field experiment with 80,000 users shows that even security-conscious users click on "accept" when a dialog resembles an end-user license agreement, thereby blindly agreeing to possibly unwanted terms.
NOTE | Identifying Drivers and Hindrances of Social User Experience in Web Services

Kaisa Väänänen-Vainio-Mattila, Tampere University of Technology & Nokia Research Center, Finland
Minna Walljas, Jarno Ojala, Tampere University of Technology, Finland
Katarina Segerståhl, University of Oulu, Finland

This research identifies distinct drivers and hindrances for social user experience (UX) of Web services. The findings can be used to inform design and as evaluation criteria for social UX.

CASE STUDY | A Novel Way to Conduct Human Studies and Do Some Good

Pradeep Buddhara ju, Yuichi Fujiki, Ioannis Pavlidis,
University of Houston, USA
Ergun Akleman, Texas A&M University, USA

The authors describe a novel way to conduct large-scale human studies achieving the maximum outreach and impact with the minimum cost.

CASE STUDY | More than a Feeling: Understanding the Desirability Factor in User Experience

Carol M. Barnum, Laura A. Palmer, Southern Polytechnic State University, USA

We report on our use of Microsoft’s product reaction cards in several studies and their effectiveness in helping us understand the desirability factor in products from our users’ perspective.

SPECIAL INTEREST GROUP | CHICAGO ABC

SPECIAL INTEREST GROUP FOR THE CHI 2010 MANAGEMENT COMMUNITY

ORGANIZERS: Garett Dworman, TecEd, USA
Jim Nieters, Yahoo, Inc., USA
Thursday | Afternoon | 14:30—16:00

- **PAPERS | CENTENNIAL 4**

**GRAPHS**

SESSION CHAIR: Steve Feiner, Columbia University

**PAPER | A Model of Symbol Size Discrimination in Scatterplots**

Jing Li, Jean-Bernard Martens, Jarke J. van Wijk, Eindhoven University of Technology, the Netherlands

Proposes an optimal scale for symbol size in scatterplots, based on a model of their perception and experiments. Provides designers with guidelines for graphic encoding using size for optimal discriminability.

**PAPER | Individual Models of Colour Differentiation to Improve Interpretability of Information Visualization**

David R. Flatla, Carl Gutwin, University of Saskatchewan, Canada

Presents a new technique for modeling human color-differentiation abilities, based on empirical calibration, that covers a wider range of color vision deficiencies and environmental effects.

**PAPER | Useful Junk? The Effects of Visual Embellishment on Comprehension and Memorability of Charts**

Scott Bateman, Regan L. Mandryk, Carl Gutwin, Aaron Genest, David McDine, Christopher Brooks, University of Saskatchewan, Canada

Presents a study of how visual embellishments affect memorability and interpretation of charts, and shows that the additional imagery can have a beneficial effect without reducing interpretation accuracy.

- **PAPERS/NOTES | REGENCY 5**

**NO TOUCH**

SESSION CHAIR: Rob Miller, MIT

**NOTE | Interactivity and Non-Interactivity on Tabletops**

Kenton O’Hara, Microsoft Research, UK

The paper discusses the relationship between interactive and non-interactive aspects of tabletop computing. The relationship is illustrated using findings from a deployment of an interactive tabletop in a public setting.

**PAPER | Clutch-Free Panning and Integrated Pan-Zoom Control on Sensitive Surfaces: The CycloStar Approach**

Sylvain Malacria, Eric Lecolinet, Yves Guiard, Télécom ParisTech, France

Describes and evaluates two navigation techniques for touchscreens based on sustained oscillatory gestures: CycloPan for clutch-free 2D panning and browsing, CycloZoom+ for integrated 2D panning and zooming.

**PAPER | Touching the Void: Direct-Touch Interaction for Intangible Displays**

Li-Wei Chan, Hui-Shan Kao, Yen-Yang Chen, Ming-Sui Lee, Jane Yung-jen Hsu, Yi-Ping Hung, National Taiwan University, Taiwan

Unlike tangible displays, intangible displays suffer from lack of tactile feedback. This paper explores the challenges in applying and investigates methodologies to improve direct-touch interaction on intangible displays.

- **PAPERS/NOTES | REGENCY 6**

**HCI AND THE DEVELOPING WORLD**

SESSION CHAIR: Gary Olson, University of California Irvine

**PAPER | Intermediated Technology Use in Developing Communities**

Nithya Sambasivan, University of California at Irvine, USA
Ed Cutrell, Microsoft Research India, India
Kentaro Toyama, University of California at Berkeley, USA
Bonnie Nardi, University of California Irvine, USA

Describes intermediated technology use in resource-constrained urban slums, including mechanisms, interface requirements, and its broader effects. Can help designers of technology for “developing” regions.

**PAPER | Deliberate Interactions: Characterizing Technology Use in Nairobi, Kenya**

Susan P. Wyche, Thomas N. Smyth, Marshini Chetty, Georgia Institute of Technology, USA
Paul M. Aoki, Intel Labs Berkeley, USA
Rebecca E. Grinter, Georgia Institute of Technology, USA

We provide empirical evidence demonstrating constraints professionals in Nairobi, Kenya, encountered when using technology. We use our findings to evaluate the “access, anytime and anywhere” construct shaping future technology design.

**NOTE | After Access - Challenges Facing Mobile-Only Internet Users in the Developing World**

Shikoh Gitau, Gary Marsden, University of Cape Town, South Africa
Jonathan Donner, Microsoft Research, USA

Looks at the issues faced by a group of mobile-only users attempting to use the internet in a township in South Africa.

**NOTE | ViralVCD: Tracing Information-Diffusion Paths with Low Cost Media in Developing Communities**

Nithya Sambasivan, University of California at Irvine, USA
Ed Cutrell, Microsoft Research India, India
Kentaro Toyama, University of California at Berkeley, USA

Describes a low-cost method to trace information-diffusion paths and technology access in poor communities. Employs Video-CDs and missed calls to gain social, technological, and developmental data. Can help HCI4D researchers.
STUDENT DESIGN COMPETITION | HANOVER CDE

SESSION CHAIRS: Steve Brewster, University of Glasgow, UK
Mike Glaser, Drexel University, USA

JUDGES:
Carla Diana, Smart Design, USA
Ellen Do, Georgia Tech, USA
Julie Maitland, NRC, Canada

This is the eighth year of the CHI Student Design Competition. The competition has grown each year with increased international representation, and always draws a large audience at CHI – it has become a major recruiting opportunity for identifying talented students. This year we received over 55 international submissions as evidence in a record number of international qualifiers into the next round of the competition. Twelve of the top submission, from the almost 90 submissions were invited to CHI 2010 to take part in the next stage(s) of the competition, based upon reviewer ratings and comments. Teams will be provided space in the convention center to display posters and discuss their proposed solutions with the CHI 2010 attendees.

This years challenge is to design an object, interface, system, or service intended to encourage people to take a walk. Use methods of ethnography and contextual research to understand the problem space, and develop user-centered design solutions to support, assist, enhance or otherwise benefit your target audience. Your solution should address one main theme that encourages people to walk such as health, enjoyment, sustainability, community, or commuting.

A scheduled 90-minute poster presentation event will take place during the conference. Student teams will be expected to host their posters and discuss their approach, design method and solutions with the Student Design Competition Judges. The competition judges will select four teams to orally present their proposed solutions during a scheduled Student Design Competition Final CHI presentation session.

PAPERS/CASE STUDY | REGENCY 7

GOING TO THE MALL: SHOPPING AND PRODUCT DESIGN

SESSION CHAIR: Gregory Abowd, Georgia Tech

PAPER | Countertop Responsive Mirror: Supporting Physical Retail Shopping for Sellers, Buyers and Companions
Maurice Chu, Brinda Dalal, Alan Walendowski, Bo Begole, Palo Alto Research Center (PARC), USA

Formative exploration of South Asian Jewelry shopping practices resulting in a novel “matched access” mirror system using computer vision. Can assist designers of technologies for collaborative evaluation of tactile products.

PAPER | Investigating the Opportunity for a Smart Activity Bag
Sun Young Park, University of California at Irvine, USA
John Zimmerman, Carnegie Mellon University, USA

CASE STUDY | Snap and Match: A Case Study of Virtual Cosmetics Color Consultation
Jhilmil Jain, Nina Bhatti, Hewlett Packard Laboratories, USA

An imaging based color cosmetics advisory service and an analysis of the effect of technical vs. social comfort of users on the design and usage of personal services for women.
**DATA MINING FOR UNDERSTANDING USER NEEDS**

**SESSION CHAIR:** Susan Dumais, *Microsoft Research*

**TOCHI | Potential for Personalization**
Jaime Teevan, Susan T. Dumais, Eric Horvitz, *Microsoft Research*

Identifies what different people consider relevant to the same query using explicit relevance judgments and implicit measures (click behavior and desktop content); applies to a personalized search system.

**TOCHI | Brief Encounters: Sensing, Modelling and Visualizing Urban Mobility and Copresence Networks**
Vassilis Kostakos, *University of Madeira, Portugal*
Eamonn O’Neill, *University of Bath, UK*
Alan Penn, *University College London, UK*
Dikaios Papadogkonas, George Roussos, *Birkbeck College, UK*

We develop and apply a toolkit of algorithms and visualisation techniques to model and make sense of spatial and temporal patterns in urban mobility, presence and encounter network traces.

**TOCHI | Creating a Lightweight UIDL: An Overview and Analysis of the Personal Universal Controller Project**
Jeffrey Nichols, *IBM Research, USA*
Brad A. Myers, *Carnegie Mellon University, USA*

We describe lessons for the design of a User Interface Description Language (UIDL) based on six years of investigation as part of the Personal Universal Controller project.

**AUTOMOTIVE USER INTERFACES: HUMAN COMPUTER INTERACTION IN THE CAR**

**ORGANIZERS:**
Albrecht Schmidt, *University of Duisburg-Essen, Germany*
Anind Dey, *CMU, USA*
Andrew Kun, *University of New Hampshire, USA*
Wolfgang Spießl, *BMW Group Research and Technology, Germany*
DOING WHAT’S RIGHT WITH ROBOTS: AN ETHICAL APPRAISAL

Noel Sharkey PhD DSc FIEE FBCS CITP FRIN FRSA
University of Sheffield, UK
Professor of Artificial Intelligence and Robotics
Professor of Public Engagement
EPSRC Senior Media Fellow

Would you let robots care for your children, mind your aging parents, perform surgery on you, protect your home and fight your wars? Since the turn of the century, sales of professional and personal service robots have risen sharply to an estimated 11.5 million by 2011. Their numbers already far outstrip the 1.2 million operational industrial robots on the planet. Service robots are good at dull, dangerous, and dirty work, such as cleaning sewers and windows and performing domestic duties. They harvest fruit, pump gasoline, assist doctors and surgeons, dispose of bombs, police us, entertain us, have sex with us and even kill us. This talk will briefly overview today’s service robots and their benefits and then focus on the near-future ethical dangers that they pose. Noel Sharkey BA PhD FIET, FBCS CITP FRIN FRSA is a Professor of Artificial Intelligence and Robotics and Professor of Public Engagement at the University of Sheffield (Department of Computer Science) and EPSRC Senior Media Fellow. He has held a number of research and teaching positions in the UK (Essex, Exeter, Sheffield) and in the USA (Yale, Stanford, Berkeley).

Dr. Sharkey has moved freely across academic disciplines, lecturing in departments of engineering, philosophy, psychology, cognitive science, linguistics, artificial intelligence and computer science. He holds a Doctorate in Experimental Psychology and an honorary Doctorate of Science. He is a chartered electrical engineer, a chartered information technology professional, a Fellow of The Royal Institution of Navigation (FRIN), the Royal Society for the encouragement of Arts, manufactures and commerce (FRSA), the Institution of Engineering and Technology (FIET), the British Computer Society (FBCS), is a member of both the Experimental Psychology Society and Association of Psychological Science and a member of Equity (the actor’s union). He has published over a hundred academic articles and books as well as articles and web chats for BBC web pages and regular magazine articles. In addition to editing several journal special issues on modern robotics, he is Editor-in-Chief of the journal Connection Science and an editor of both Robotics and Autonomous Systems and Artificial Intelligence Review. His main research interests are now in Biologically Inspired Robotics, Cognitive Processes, history of automata (from ancient times to present), Human-Robot interaction and communication, Representations of Emotion and Machine learning.
Media Showcase
Posters/Exhibits
### Media Showcase At-A-Glance

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The CHI Media Showcase for 2010 combines multiple venues from previous CHI conferences, including the Video Showcase, Design Vignettes, and Interactivity. Together we have formed a centerpiece for the conference that will surely stimulate, inspire, and potentially challenge your assumptions about what Human-Computer Interaction is... and what it will become. The showcase will take place in the main exhibit hall throughout the conference with concerts, interactivity demonstrations, panel discussions, performances, and videos. Be sure to stop by at each break, in between program sessions to see a performance, try some hands-on interactivity demos, and meet with the 2010 CHI Media Showcase authors. You’ll be able to see, touch, squeeze, hear or even smell visions for the future of HCI. So what does the future feel like? Come find out at the 2010 CHI Media Showcase!

**Augmented Reality Games**

Ohan Oda, Steven Feiner, Columbia University

We present two fast-paced augmented reality games. One is a single-player game experienced through a head-worn display. The player manipulates a tracked board to guide a virtual ball through a dynamic maze of obstacles. Combining the 3DOF absolute orientation tracker on the head-worn display with 6DOF optical marker tracking allows the system to always account for the correct direction of gravity. The second game is a networked, two-player, first-person-shooter, in which tracked hand-held UMPCs are used to blast virtual dominoes off a table. Players' virtual locations are warped to keep them from physically interfering with each other.

**Critical Gameplay: Software Studies**

Lindsay Grace, Miami University

The computer game software with which we interact on a daily basis not only entertains us, it trains us into specific patterns. Critical Gameplay is a design practice which endeavors to expose and redesign the patterns to which standard gameplay subscribes. The ongoing project seeks to identify the dominant values, philosophies and problem solving models reinforced by computer games and provides prototypical alternates to those standards.

**The Elocuter: I Must Remind You We Live in Dada Times**

Fabian Winkler, Shannon McMullen, Purdue University

The Elocuter is a sonification device that attaches via suction cup to a computer screen. It translates newspaper headlines about the global economic crisis into spoken words, composed of impossible sequences of allophones similar to a Dada poem. The project references poetic experiments of the Dada movement of the 1910/20s, specifically the play with language as a way to respond to a seemingly irrational political and cultural context. Finally, this project can be placed in the history of combining human and machine components into instruments for performance.
The EmotiChair - An Interactive Crossmodal Tactile Music Exhibit  
Booth 35

Maria Karam, Carmen Branje, Gabe Nespoli, Norma Thompson, Frank Russo, Deborah Fels, Ryerson University

The Emoti-Chair is a sensory substitution system that brings a high-resolution audio-tactile version of music to the body. The system can be used to improve music accessibility for deaf or hard of hearing people, while offering everyone the chance to experience sounds as tactile sensations. The model human cochlea (MHC) is the sensory substitution system that drives the Emoti-Chair. Music can be experienced as a tactile modality, revealing vibrations that originate from different instruments and sounds spanning the audio frequency spectrum along multiple points of the body. The system uses eight separate audio-tactile channels to deliver sound to the body, and provides an opportunity to experience a broad range of musical elements as physical vibrations.

Exploring Interfaces to Species Identification  
Booth 36

Sean White, Steven Feiner, Columbia University

We have developed several prototype user interfaces for botanical species identification and data collection across a diversity of platforms including Tablet PC, Ultra Mobile PC (UMPC), Apple iPhone, Augmented Reality, and Microsoft Surface. In our demonstration, we show UMPC and iPhone user interfaces, discuss the commonalities and distinctions across different interfaces, and invite visitors to explore these differences. Our prototypes address several issues of interest to the CHI community including mobile interfaces, interfaces to different platforms including Tablet PC, Ultra Mobile PC, and the arts.

Booth 32i

Kenny Chow, The Hong Kong Polytechnic University D. Fox Harrell, Georgia Institute of Technology

Generative Visual Renku (GVR), a new genre of visual interactive/generative art form is inspired by Japanese renku poetry and generative contemporary art. GRIOT, a system for composing generative and interactive multimedia discourse, is used to semantically constrain generated output both visually and conceptually. GVR utilizes GRIOT to implement constraints for visual composition, revealing new technical and aesthetic challenges. Since modular animated graphical systems are ubiquitous in computing culture, ranging from avatars to GUIs, GVR works pose a contribution to a breadth of HCI research and to the development of new theory and technology for integrating AI and the arts.

iFeel_IM: Innovative Real-Time Communication System with Rich Emotional and Haptic Channels  
Booth 38i

Dzmitry Tsetserukou, Alena Neviarouskaya, University of Tokyo Helmut Prendinger, National Institute of Informatics, Japan Mitsuru Ishizuka, University of Tokyo, Japan Susumu Tachi, Keio University, Japan

The motivation behind our work is to enrich social interaction and emotional involvement of the users of online communication media. iFeel_IM users can not only exchange messages but also emotionally and physically feel the presence of the communication partner (e.g., family member, friend, or beloved person).

Interactive Learning with Simon the Robot  
Booth 14i

Andrea Lockerd-Thomaz, Maya Caikmak, Crystal Chao, Georgia Institute of Technology

There is currently a surge of interest in having robots leave the labs and factory floors to help solve critical issues facing our society, ranging from eldercare to education. We have many problems to solve before general-purpose robots can function in, inherently social, dynamic human environments. A critical issue is that we will not be able to pre-program robots with every skill they will need to play a useful role in society; robots will need the ability to interact and learn new things `on the job.' The goal of our research is to enable robots to learn new tasks and skills from everyday people. We focus on the key point that the robot learning by demonstration problem takes place within a social structure that can guide and constrain the learning problem. We believe that addressing this point will be essential for developing systems that can learn from everyday people that are not experts in Machine Learning or Robotics.

Layered Surveillance - A Collaborative Interactive Art Installation  
Hanover A

Annabel Manning, New Media Artist Celine Latulipe, University of North Carolina at Charlotte

Annabel Manning explores the world of immigration and identity, and explores imagery related to border crossings and surveillance. Computer scientist Celine Latulipe explores embodied, collaborative interaction. The intersection of these two worlds leads to research in embodied collaborative interaction and an interactive art exhibit in which participants can explore both static images through interactive layers, and moving video through interactive surveillance lenses. Participants can explore alone or with others, using gyroscopic mice to control different aspects of the artwork. The participants are led, through interaction, to contemplate the (in)visibility of the immigrant and the agency of surveillance.
Pinch-the-Sky Dome: Freehand Multi-Point Interactions with Immersive Omni-Directional Data  Booth 17i
Hrvoje Benko, Andrew D. Wilson, Microsoft Research

Pinch-the-Sky Dome is a large immersive installation where several users can interact simultaneously with omni-directional data inside of a tilted geodesic dome. Our system consists of an omni-directional projector-camera unit in the center of the dome. The projector is able to project an image spanning the entire 360 degrees and a camera is used to track freehand gestures for navigation of the content. The interactive demos include: 1) the exploration of the astronomical data provided by World Wide Telescope, 2) social networking 3D graph visualizations, 3) immersive panoramic images, and 4) 360 degree video conferencing. We combine speech commands with freehand pinch gestures to provide a highly immersive and interactive experience to several users inside the dome, with a very wide field of view for each user.

Recognizing Shapes and Gestures Using Sound as Feedback  Booth 22i
Javier Sanchez, Jaroslaw Kapuscinski, Stanford University

The system is based on the idea of relating spatial representations to sound. The shapes are predefined and the user has no access to any visual information. The user interacts with the system using a universal pointer device, as a mouse or a pen tablet, or the touch screen of a mobile device. While exploring the space using the pointer device, sound is generated, which pitch and intensity vary according to a strategy. Sounds are related to spatial representation, so the user has a sound perception of shapes and gestures. They can be easily followed with the pointer device, using the sound as only reference.

Robotany: Breeze  Booth 34i
Jill Coffin, Georgia Institute of Technology

Breeze is a roboticized live Japanese maple. Breeze senses and responds to human presence and movement through a variety of technological mechanisms. Its eye is a 360-degree, catadiotrophic lens positioned above the canopy. Its compound ears are a custom-built ultrasonic sensor array below the canopy. Shape memory alloys form gross and fine muscular systems. Breeze is part of an art research program titled Robotany, which uses techno-organic artifacts to understand aspects of human interaction with technology.

Visible and Controllable RFID Tags  Booth 33i
Nicolai Marquardt, University of Calgary
Alex S. Taylor, Nicolas Villar, Microsoft Research Cambridge UK
Saul Greenberg, University of Calgary

Radio frequency identification (RFID) tags containing privacy-sensitive information are increasingly embedded into personal documents such as passports and driver’s licenses. The problem is that people are often unaware of the security and privacy risks associated with RFID, likely because the technology remains largely uncontrollable for the individual. To mitigate this problem, we developed a collection of novel yet simple and inexpensive alternative tag designs to make RFID visible and controllable.

Weight-Shifting Mobiles: Automatic Balancing in Mobile Phones  Booth 37i (1 of 3)
Fabian Hemmert, Susann Hamann, Matthias Löwe, Josefine Zeipelt, Gesche Joost, Deutsche Telekom Laboratories

We present a new type of interaction support for mobile phones: Automatic balancing through weight-shift. The weight-shift in mobile phones could be used as to change the device’s balancing behavior. The question that this technology can help us to explore is how our interaction with mobile phones in everyday life could change, once devices were able to actively change the way we hold them in our hands.

Weight-Shifting Mobiles: Two-Dimensional Gravitational Displays in Mobile Phones  Booth 37i (2 of 3)
Fabian Hemmert, Susann Hamann, Matthias Löwe, Josefine Zeipelt, Gesche Joost, Deutsche Telekom Laboratories

We present a novel type of haptic display for usage in mobile phones. It changes the gravitational properties of the device by shifting an internal weight along two axes. Its utility is explored in a performance study, in which users were estimating positions of the device’s actuated center of gravity. The users also participated in qualitative studies: A questionnaire that assessed the perceived quality of interacting with the device, and an interview in which they described their experiences with the weight-shifting mobile. Furthermore, we suggest three domains of application in which the system may be of benefit: Augmenting digital content with physical mass, ambient displays, and haptically augmented wayfinding.

Shape-Changing Mobiles: Tapering in Two-Dimensional Deformational Displays  Booth 37i (3 of 3)
Fabian Hemmert, Susann Hamann, Matthias Löwe, Josefine Zeipelt, Gesche Joost, Deutsche Telekom Laboratories

We present a novel haptic actuation system for mobile phones: Two-dimensional tapering through an actuated back plate. We propose this type of shape-change for various applications, e.g. for ergonomically actuating the shape itself, displaying internal contents, and pointing to entities located outside the device. A user study was conducted in which the accuracy of perceiving the two-dimensional tilt of the phone’s back plate is measured, as well as results from a questionnaire and a user interview. The results indicate that two-dimensional shape change may be a suitable addition to existing mobile phone technology.
CHI Media Showcase performances bring human-computer interaction to electrifying live music, video, and dance performances. Come see how these performers use new interfaces in these strikingly creative artistic works.

**Bioluminescence**

R. Luke Dubois, Polytechnic Institute of New York University
Lesley Flanigan

Bioluminescence is a performance by R. Luke DuBois and Lesley Flanigan that explores the modality of human voice. The voice has a unique role in our musical culture, bridging the linguistic and the semiotic in a way that transcends instrumentality through a highly personal embodiment of musicianship. DuBois and Flanigan investigate the possibilities of the improvised voice in tandem with electroacoustic processing. The interplay between the two performers (one singing, one processing) engages the metaphor of the voice as impulse and the computer as filter, creating a dense palette of evocative sounds and images derived entirely from the voice of the singer. Using custom software written by DuBois, Flanigan’s voice is restructured live and in real time through spectral processing. While the two performers partake in a “dialogue” of sounds and words, the changing shape of the voice is traced visually through live video, leaving trails that evoke the memory of voice. These visuals act as a sonogram, allowing us to see what is heard in relation to how we are listening.

**The Biomuse Trio**

Eric Lyon, Queen’s University Belfast, UK

The Biomuse Trio is computer chamber music for violin, computer and biomuse. The violinist performs conventionally; the only sensor used is a microphone to capture its sound. The computer produces all of its sound through processing of violin sounds captured during performance. The performance of the computer sound is controlled by the gestures of the biomusician, measured with on-body sensors. The musical composition consists of precisely sequenced events for violinist and biomusician, as well as performance environments that are explored through improvisation.

**Critical Point**

Roger Dannenberg, Carnegie Mellon University, USA
Tomas Laurenzo, Universidad de la Republica, Uruguay

Critical Point is written for solo cello and interactive computer music system with two to four channel sound system and computer animation. The cellist plays from a score, and the computer records and transforms the cello sounds in various ways. Graphics and video are also projected. The computer-generated graphics are affected by audio from the live cellist. Critical Point is written in memory of the artist Rob Fisher.

**Everybody to the Power of One, for Soprano T-stick**

D. Andrew Stewart, Joseph Malloch, McGill University, Canada

We present a live solo concert performance of an original piece of music, *Everybody to the Power of One*, written for the soprano T-Stick digital musical instrument. Like other digital musical instruments, the T-Stick enables the reincorporation of performer gesture as the main source of control in computer-based music making. A brief description of the instrument development, gesture-sound mapping and performance practice is given, followed by an introduction to the compositional motivation and materials of the piece. *Everybody to the power of one* is the fourth musical composition created for the T-Stick by composer and performer D. Andrew Stewart.

**Exploring the Design Space in Technology-Augmented Dance (Dance.Draw)**

Celine Latulipe, Sybil Huskey, David Wilson, University of North Carolina at Charlotte, USA
Mike Wirth, Queens University of Charlotte, USA
Berto Gonzalez, Arthur Carroll, Melissa Word, Erin Carroll, Vikash Singh, University of North Carolina at Charlotte, USA
Danielle Lottridge, University of Toronto, Canada

This performance is part of an ongoing Dance.Draw project at the University of North Carolina at Charlotte, which investigates lightweight methods for integrating dance motion with interactive visualizations and enhancing audience interaction with dance.

**Posthorn**

Ben Neill, Ramapo College, USA
Bill Jones, First Pulse Projects, USA

Posthorn is a live performance piece by Ben Neill and Bill Jones for Neill’s self-designed mutantrumpet/interactive computer system. The work is titled after and based on the “posthorn solo,” a section of the third movement of Gustav Mahler’s Symphony No. 3, originally composed in 1898. Posthorn represents the most advanced interactive techniques and ideas that have emerged out of their collaboration which began in the mid 1990’s. While their projects have taken on various forms, all of the work they have created together is concerned with merging sound and visual media through live interactive performance technologies.
Radio Healer
Christopher Martinez, Lisa Tolentino, Randy Kemp, Arizona State University, urbanSTEW, USA
This performance reflects upon the indigenous cultural implications of consumer technologies such as the Internet, mobile handheld devices, and personal computers, and how this relates to the effects of these technologies upon the lived experiences of all people. *Radio Healer* achieves this through the tactical appropriation and adaptive reuse of consumer technologies by indigenous peoples, along with the expression of indigenous media through sustainable cross-cultural partnerships between peoples of diverse backgrounds. The motivation of our collaborative work is to appropriate and express electronic technology in order to recognize the sovereign rights of indigenous peoples.

The Reactable Concert: Tangible and Tabletop Music Performance
Sergi Jorda, Universitat Pompeu Fabra, Reactable Systems, Spain
We present the Reactable, a new electronic musical instrument with a simple and intuitive tabletop interface that turns music into a tangible and visual experience. The Reactable is built upon a tabletop interface, which is controlled by manipulating tangible acrylic pucks on its surface. By rotating and connecting these pucks on the Reactable’s translucent and luminous round surface, performers can combine different elements like synthesizers, sample loops or control elements in order to create a unique and flexible composition. As soon as any puck is placed on the Reactable’s surface, it is illuminated and starts to interact with the other neighboring pucks, according to their positions and proximity. These interactions are visible on the table surface that acts as a screen, giving instant feedback about what is currently going on, turning music into something visible and tangible.

Sawtooth: Interactive Clarity and Aesthetic Complexity
Christopher Burns, University of Wisconsin-Milwaukee, USA
Sawtooth is an improvised multimedia performance. A performer’s gestures are captured by a video camera, and translated into both music and animation. The size, location, and frequency of gestures correlate to the complexity and intensity of sound and image.

Shadows No. 4: Belly Dance and Interactive Electroacoustic Musical Performance
Aurie Y. Hsu, Steven T. Kemper, University of Virginia, USA
Shadows No. 4 is a piece for a tribal-fusion belly dancer, wireless sensor network, and electronics. The movement vocabulary is derivative of Raqs al-Sharqi, commonly known as *danse orientale* (Middle Eastern dance). This dance form involves slow and languid movement and controlled isolations. The piece experiments with notions of gesture (dance and musical) in the performance of electroacoustic music. During the performance, sensors translate the dancer’s movements into subtle and salient variations of the sonic texture.

Shimon: An Interactive Improvisational Robotic Marimba Player
Guy Hoffman, Ryan Nikolaidis, Gil Weinberg, Georgia Institute of Technology, USA
Shimon is an autonomous marimba-playing robot designed to create interactions with human players that lead to novel musical outcomes. The robot combines music perception, interaction, and improvisation with the capacity to produce melodic and harmonic acoustic responses through choreographic gestures. We developed an anticipatory action framework, and a gesture-based behavior system, allowing the robot to play improvised Jazz with humans in synchrony, fluently, and without delay. In addition, we built an expressive non-humanoid head for musical social communication.

“Sxrratch” for Metasaxophone
Matthew Burtner, CEMI, University of Virginia, USA
*Sxrratch* (2006) is a musical composition and interactive performance work created for the Metasaxophone, an augmented instrument invented and built by the composer in 1999. The Metasaxophone is one of the earliest augmented instruments still in regular use today. The piece uses the interface to control interactive computer sound software and robots.
Media Showcase

**COGKNOW Day Navigator: The System in Daily Life**
Johannes Boer, Novay, The Netherlands

In this project, people with dementia and their caregivers were asked to describe their problems in daily life. With their information, we developed integrated solutions to help people with dementia experience greater autonomy and an enhanced quality life.

**ContraVision: Presenting Contrasting Visions of Future Technology**
Blaine A. Price, Clara Mancini, Yvonne Rogers, Arosha K. Bandara, The Open University, UK
Tony Coe, Two Cats Can Productions, UK
Adam N. Joinson, The University of Bath, UK
Jeffrey Lay, The Open University, UK
Bashar Nuseibeh, The Open University and University of Limerick, UK

How can we best explore the range of users’ reactions when developing future technologies that may be controversial, such as personal healthcare systems? Our approach in ContraVision uses futuristic videos, or other narrative forms, that convey both negative and positive aspects of the proposed technology for the same scenarios. This work presents a new methodology for eliciting reactions to future technology using contrasting positive and negative representations to elicit elusive concerns such as privacy and identity.

**Counterlines: a Duet for Piano and Pen Display**
Javier Sanchez, Jaroslaw Kapuscinski, Stanford University, USA

Counterlines is a duet for Disklavier and Wacom Cintiq, in which both performers generate audiovisual materials that relate to each other contrapuntally. In the described studies, the pianist generates graphic lines while playing music and the graphic performer generates piano lines by drawing. To reinforce the clarity of relationships between visual contours all graphic elements are projected on a single screen.

**Exploring Information Spaces by Using Tangible Magic Lenses in a Tabletop Environment**
Martin Spindler, Raimund Dachselt, Otto-von-Guericke-University of Magdeburg, Germany

To solve the challenge of exploring large information spaces on interactive surfaces such as tabletops, we developed an optically tracked, lightweight, passive display (magic lens) that provides elegant three-dimensional exploration of rich datasets. This can either be volumetric, layered, zoomable, or temporal information spaces, which are mapped onto the physical volume above a tabletop. By moving the magic lens through the volume, corresponding data is displayed, thus serving as a window into virtuality. Hereby, various interaction techniques are introduced, which especially utilize the lens’ height above a tabletop in a novel way (e.g. for zooming or displaying information layers).

**Gest - Exploring Gestural Interaction**
Ankur Sardana, Abhijit Bairagi, Honeywell, India

Imagine returning home from a hard day’s work, plonking down on a favorite beanbag and tuning into a sports channel simply by pointing at a football lying around and then to the television. Imagine calling up the car service station by pointing your mobile phone to your car. Imagine pointing an mp3 player to a poster of Sting (a popular musician) on the wall to play his songs. We imagined… and called it Gest.

**Mirrored Message Wall: Sharing Between Real and Virtual Space**
Jung-Ho Yeom, Beng-Kiang Tan, National University of Singapore, Singapore

The Mirrored Message Wall is a public display to promote social communication and use participation. It exists in both physical and virtual space and is a bridge to connect users between the real and virtual worlds.

**Open Columns**
Omar Khan, Center for Architecture and Situated Technologies, USA

This project examines the use of composite urethane elastomers for constructing responsive structures at an architectural scale. It explains the underlying material research and design criteria for constructing deployable columns that are responsive to carbon dioxide (CO2) emissions and are used to reconfigure and pattern the space of inhabitation.

**The Proximity Toolkit and ViconFace: The Video**
Rob Diaz-Marino, Saul Greenberg, University of Calgary, Canada

Proximity Toolkit is a toolkit that simplifies the exploration of interaction techniques based on proximity and orientations of people, tools, and large digital surfaces. ViconFace is a playful demonstration application built atop of this toolkit. A cartoon face on a large display tracks a person moving around it, where it visually and verbally responds to that person’s proximity, orientation and wand use. The accompanying video illustrates all this in action.
and expand the affectionate bond between people.

Experiences like Tongue Music: The Sound of a Kiss can reveal love as a complex emotion, so representing it is a daunting task. Most of us agree that kissing is a natural expression of affection. I hope experiences like Tongue Music: The Sound of a Kiss can reveal and expand the affectionate bond between people.

Conclusion - Tongue Music: The Sound of a Kiss can be thought of as a sonic representation of the abstract concept of love. Love is a complex emotion, so representing it is a daunting task. Most of us agree that kissing is a natural expression of affection. I hope experiences like Tongue Music: The Sound of a Kiss can reveal and expand the affectionate bond between people.
CHI 2010 POSTERS

Poster will be spotlighted in the poster area of the Commons (Grand Hall) and the Grand Hall Lobby. Poster authors are scheduled to stand by their posters during times indicated below. Please visit the posters each day, see all the excited work being done, and discuss new ideas with poster presenters.

Tuesday (10:30-11:30)
- Work-In-Progress: WIP 001-096 (Commons)
- Student Research Competition: SRC 01-21 (Lobby)

Wednesday (10:30-11:30)
- Work-In-Progress: WIP 097-183 (Commons)
- Student Design Competition: SDC 01-12 (Lobby)
- Select Workshops (Lobby)

Thursday (10:30-11:30)
- Doctoral Consortium: DC 01-24 (Commons)

STUDENT DESIGN COMPETITION

SDC01 | BuddyBearings: A Person-to-Person Navigation System
George Hayes, Dhawal Mujumdar, Thomas Schluchter, University of California, Berkeley, USA

SDC02 | Mibo: A Mobile Application to Encourage Walking
Malhar Gupta, Kathryn McCurdy, Honor Potvin, Eunyoung Song, Xiaowen Zhang, University of Michigan School of Information, USA

SDC03 | WAND: Walk Around Navigation Device for Children with Autism Spectrum Disorders
Brytton Bjorngaard, Mikako Matsunga, Haipiong Che, Jeritt Tucker, Mariam Melkumyan, Iowa State University, USA

SDC04 | Soto | Social Walking Through School Initiated Challenges
Joran Damsteeg, Lilian Admiral, Eindhoven University of Technology, The Netherlands

SDC05 | Explorawalk: Encouraging Families to Walk Together
Louise Macaulay, Emmanuelle Cerovic-Bunn, Siobhan Kavanagh, Dun Laoghaire Institute of Art Design & Technology, I.A.D.T., Ireland

SDC06 | Living Avatar Network for Outsourcing Experiences and Realities: Real Time Interface In Interactive walk
Inosha Wickrama, Muhammad Farkhan B Salleh, Muhammad Shafii B Rafie, Xiu Fang Tan, Giang Thanh Vu, National University of Singapore, Singapore

SDC07 | Urban Green Line
Mikkel Hansen, Tina Dhingra, Mayra Frank Maria Jeansson, Pratima Kalmadi, Asya Arabadzhyska, Eric Liu, Central Saint Martins College of Art and Design, UK

SDC08 | Night Beacon: A System to Empower people to Walk With Confidence at Night
Michael Harmala, Taeho Ko, Anna Jonsson, Garima Garg, Yi-Wei Chia, University of Michigan, USA

SDC09 | Walking Our ‘Hood’
Michelle Lui, Andrea Tavchar, Christina Kim, University of Toronto, Canada

SDC10 | World of WALKcraft: Motivating physical activity in hardcore gamers
Josh Coe, Katia Serralheiro, Carnegie Mellon University, USA
Clinton Jorge, Ruben Gouveia, University of Madeira, Portugal

SDC11 | FootPal- Build Social Rivalries Around Maintainable Walking Habits.
Ko-Hsun Huang, Chen-Hao Wang, Chong-Hong Ling, National Chiao Tung University NCTU, Taiwan

SDC12 | Zombies and the Art of Making People Walk
Hannah Jaber, Brian Auron, Jeffrey Brock, University of Minnesota, Twin Cities (UMNTC), USA

STUDENT RESEARCH COMPETITION

SRC01 | Himawari: Shape Memory Alloy Motion Display for Robotic Representation
Akira Nakayasu, Graduate School of Design, Kyushu University, Japan

SRC02 | Constant Connectivity, Selective Participation: Mobile-Social Interaction of Students and Faculty
Dana Rotman, University of Maryland, USA

SRC03 | Remote Web Browsing Via the Phone With TeleWeb
Yevgen Borodin, Stony Brook University, USA

SRC04 | Health Shelf: Interactive Nutritional Labels
Sapna Bedi, University of British Columbia, Canada
Javier Diaz Ruvalcaba, University of Victoria, Canada
Zoltan Foley-Fisher, Noreen Kamal, Vincent Tsao, University of British Columbia, Canada

SRC05 | DragonFly: Spatial Navigation for Lecture Videos
Christian Corsten, RWTH Aachen University, Germany

SRC06 | iPhone as a Physical Activity Measurement Platform
Yuichi Fujiki, University of Houston, USA

SRC07 | Exploring Iterative and Parallel Human Computation Processes
Greg Little, MIT, USA
SRC08 | A Task-Focused Approach to Support Sharing and Interruption Recovery in Web Browsers
Mohan Raj Rajamanickam, Russell MacKenzie, Billy Lam, Tao Su, University of British Columbia, Canada

SRC09 | Mudpad: Fluid Haptics for Multitouch Surfaces
Yvonne Jansen, RWTH Aachen University, Germany

SRC10 | CUMU Editor: A Non-WYSIWYG Web Editor for Non-Technical Users
Eleanor Poley, Knox College, USA

SRC11 | Building Common Ground and Reciprocity Through Social Network Games
D. Yvette Wohlt, Yu-hao Lee, Jieun Sung, Torger Bjornrud, Michigan State University, USA

SRC12 | Usability and Strength in Click-Based Graphical Passwords
Elizabeth Stobert, Carleton University, Canada

SRC13 | SequenceBook: Interactive Paper Book Capable of Changing the Storylines by Shuffling Pages
Hiroki Yamada, University of Tokyo, Japan

SRC14 | Get the Picture? Evaluating Interfaces through Children’s Drawings
Cristina Sylla, University of Minho, Portugal

SRC15 | Cobra: Flexible Displays for MobileGaming Scenarios
Zi Ye, Hammad Khalid, Queen’s University Human Media Lab, Canada

SRC16 | gBook: An e-Book Reader with Physical Document Navigation Techniques
Jesse Burstyn, M. Anson Herriotts, Queen’s University, Canada

SRC17 | PIM-Mail: Consolidating Task and Email Management
Jan-Peter Krämer, RWTH Aachen University, Germany

SRC18 | Exploring Reactive Access Control
Richard Shay, Michelle L. Mazurek, Peter F. Klemperer, Carnegie Mellon University, USA

Hassan Takabi, University of Pittsburgh, USA

SRC19 | Cookie Confusion: Do Browser Interfaces Undermine Understanding?
Aleecia M. McDonald, Carnegie Mellon, USA

SRC20 | Buddy Bearings: A Person-To-Person Navigation System
George T. Hayes, Dhawal Mujumdar, Thomas Schluchter, University of California, Berkeley, USA

SRC21 | Effects of Cognitive Aging on Credibility Assessment of Online Health Information
Qingzi Vera Liao, University of Illinois at Urbana Champaign, USA

DOCTORAL CONSORTIUM

DC01 | Exploring Mobile Technologies for the Urban Homeless
Christopher Le Dantec, Georgia Institute of Technology, USA

DC02 | Evaluating the Social Acceptability of Multimodal Mobile Interactions
Julie Rico, University of Glasgow, UK

DC03 | HCI Methods for Including Adults With Disabilities in the Design of CHAMPION
Suzanne Prior, University of Dundee, UK

DC04 | Heads-Up Engagement With the Real World: Multimodal Techniques for Bridging the Physical-Digital Divide
Simon Robinson, Swansea University, UK

DC05 | Supporting Medical Communication with a Multimodal Surface Computer
Anne Marie Piper, University of California, San Diego, USA

DC06 | Interfaces beyond the Surface: A Structural Approach to Embodiment
Fabian Hemmert, Deutsche Telekom Laboratories, Germany

DC07 | Lowering the Barrier to Applying Machine Learning
Kayur Patel, University of Washington, USA

DC08 | The Role of Tangible Technologies for Special Education
Taciana Pontual Falcao, Institute of Education London, UK

DC09 | Improved Window Switching Interfaces
Susanne Tak, University of Canterbury, New Zealand

DC10 | Making Sense of Activity Lifelog Data
Matthew Lee, Carnegie Mellon University, USA

DC11 | Emotions Experienced By Families Living at a Distance
Hyesook Kim, University of York, UK

DC12 | Studying and Tackling Temporal Challenges in Mobile HCI
Joel Fischer, The Mixed Reality Laboratory, University of Nottingham, United Kingdom

DC13 | Supporting and Transforming Leadership in Online Creative Collaboration
Kurt Luther, Georgia Institute of Technology, USA

DC14 | Real-Time Interaction With Supervised Learning
Rebecca Fiebrink, Princeton University, USA

DC15 | Design Methods on the Move: Culture and Knowledge in HCI
Lilly Irani, University of California, Irvine, USA
DC16 | Cultural Versioning of Mobile User Experience  
Qifeng Yan, NOKIA DESIGN, Finland

DC17 | Supporting Effective User Navigation in Digital Documents  
Jennifer Pearson, Swansea University, UK

DC18 | Thanatosensitively Designed Technologies for Bereavement Support  
Michael Massimi, University of Toronto, Canada

DC19 | Understanding Digital Technical Practices around Creative Handwork  
Daniela Rosner, School of Information, UC Berkeley, USA

DC20 | LiquidText: Active Reading through Multitouch Document Manipulation  
Craig Tashman, Georgia Institute of Technology, USA

DC21 | Designing and Evaluating Voice-Based Virtual Communities  
Neil Patel, Stanford University, USA

DC22 | TAVR: Temporal-aural-visual Representation for Representing Imperceptible Spatial Information  
Minyoung Song, University of Michigan, USA

DC23 | Building Interpretable Discussions for Effective Large-Scale Public Engagement  
Travis Kriplean, University of Washington, USA

DC24 | Grassroots Heritage: A Social Media Probes Approach to Heritage Study and Design in a Participatory Age  
Sophia Liu, University of Colorado at Boulder, USA

WIP001 | Vote-O-Graph: A Dishonest Touchscreen Voting System  
Andrea L. Mascher, Paul T. Cotton, Douglas W. Jones, The University of Iowa, USA

WIP002 | Gestalt Theory, Engagement and Interaction  
Robert Fraher, James Boyd-Brent, University of Minnesota, USA

WIP003 | Maintaining Levels of Activity using a Haptic Personal Training Application  
HuiMin Qian, Ravi Kuber, Andrew Sears, UMBC, USA

WIP004 | Social and Spatial Interactions: Shared Co-Located Mobile Phone Use  
Andrés Lucero, Jaakko Keränen, Tero Jokela, Nokia Research Center, Finland

WIP005 | Natural Interaction Enhanced Remote Camera Control for Teleoperation  
Dingyun Zhu, CSIRO / ANU, Australia

WIP006 | The Complexity of Perception of Image Distortion: An Initial Study  
Yuzhen Niu, Shandong University, China

WIP007 | CheekTouch: An Affective Interaction Technique while Speaking on the Mobile Phone  
Young-Woo Park, Chang-Young Lim, Tek-Jin Nam, Korea

WIP008 | Making Policy Decisions Disappear into the User’s Workflow  
Alan H. Karp, Marc Stiegler, Hewlett-Packard Laboratories, USA

WIP009 | MotionBeam: Designing for Movement with Handheld Projectors  
Karl D. D. Willis, Carnegie Mellon University, USA

WIP010 | Service Users’ Views of a Mainstream Telecare Product - the Personal Trigger  
Andrea Taylor, Stefan Agamanolis, Distance Lab, UK

WIP011 | GridOrbit Public Display: Providing Grid Awareness in a Biology Laboratory  
Juan David Hincapié Ramos, Aurélien Tabard, Jakob Bardram, Tomas Sokoler, IT University of Copenhagen, Denmark

WIP012 | Hybrid Groups of Printed and Digital Documents on Tabletops: A Study  
Jürgen Steinle, Mohammadreza Khalilbeigi, Max Mühlhäuser, Technische Universität Darmstadt, Germany

WIP013 | CloudRoom: A Conceptual Model for Managing Data in Space and Time  
Lucia Terrenghi, Vodafone GROUP R&D, Germany

WIP014 | Who Said What When? Capturing the Important Moments of a Meeting  
Shoou-Jong Yu, Ted Selker, Carnegie Mellon Silicon Valley, USA

WIP015 | Using Word Spotting to Evaluate ROILA: A Speech Recognition Friendly Artificial Language  
Omar Mubin, Christoph Bartneck, Lee Feijs, Eindhoven University of Technology (TU/e), The Netherlands
WIP016 | Integrated Model Based on the Psychology of Active/Non-active Computer Users: Activating Technology Holdouts
Momoko Nakatani, Takehiko Ohno, Ai Nakane, Yurika Katagiri, Human Interaction Project, NTT Cybersolutions Laboratories, Japan
Shuji Hashimoto, Waseda University, Japan

WIP017 | PhotoSense: Emergent Semantics Based Approach To Image Annotation
Rohit Ashok Khot, Kannan Srinathan, International Institute of Information Technology Hyderabad, India

WIP018 | Eye Tracking Analysis of Preferred Reading Regions on the Screen
Georg Buscher, Ralf Biedert, DFKI, Germany
Daniel Heinesch, University of Kaiserslautern, Germany
Andreas Dengel, DFKI, Germany

WIP019 | Pot à Musique: Tangible Interaction with Digital Media.
Steven Strachan, Orange Labs, France
Benjamin Mazoin, ENSCI-Les ateliers, France
Agnès Gimeno, Orange Labs, France

WIP020 | Auditory Menus Are Not Just Spoken Visual Menus: A Case Study of “Unavailable” Menu Items
Myounghoon Jeon, Siddharth Gupta, Benjamin K. Davison, Bruce N. Walker, Georgia Institute of Technology, USA

WIP021 | Video Microblogging: Your 12 Seconds of Fame
Nis Bornoe, University of Copenhagen, Denmark
Louise Barkhuus, University of California, San Diego, USA

WIP022 | Tagliatelle: Social Tagging to Encourage Healthier Eating
Conor Linehan, Mark Doughty, Shaun Lawson, Ben Kirman, University of Lincoln, UK
Patrick Olivier, Paula Moynihan, Newcastle University, UK

WIP023 | Green Tracker: A Tool for Estimating the Energy Consumption of Software
Nadine Amsel, Bill Tomlinson, University of California, Irvine, USA

WIP024 | Touch Your Way: Haptic Sight for Visually Impaired People to walk with Independence
Ji-Won Song, Korea Advanced Institute of Science and Technology, Republic of Korea
Sung-Ho Yang, Inje, Kookmin University, Republic of Korea

WIP025 | MobiGaze: Development of a Gaze Interface for Handheld Mobile Devices
Takashi Nagamatsu, Kobe University, Japan
Michiya Yamamoto, Hiroshi Sato, Kwansei Gakuin University, Japan

WIP026 | A Multi-Touch Enabled Steering Wheel - Exploring the Design Space
Max Pfeiffer, Dagmar Kern, University Duisburg-Essen, Germany
Johannes Schöning, German Research Center for Artificial Intelligence, Germany
Tanja Döring, University Duisburg-Essen, Germany
Antonio Krüger, German Research Center for Artificial Intelligence, Germany
Albrecht Schmidt, University Duisburg-Essen, Germany

WIP027 | Mobile Questionnaires for User Experience Evaluation
Heli Väätäjä, Tampere University of Technology, Finland
Virpi Roto, Nokia Research Center, Finland

WIP028 | Trouble-spotting Photoshows: Capturing Everyday HCI Experiences
Jill Palzkill Woelfer, Philips Healthcare University of Washington, USA

WIP029 | Scaffolding Science Inquiry in Museums with Zydeco
Alex Kuhn, Clara Cahill, Chris Quintana, Elliot Soloway, University of Michigan, USA

WIP030 | Socially Cued Mental Models
Abhay Sukumaran, Clifford Nass, Stanford University, USA

WIP031 | Location Aware Applications to Support Mobile Food Vendors in the Developing World
Rahmad Dawood, Jude Yew, Steven J. Jackson, University of Michigan, USA

WIP032 | SocialCRC: A Social- and Context-Aware Rendezvous Coordination System
Chuang-wen You, Academia Sinica, Taiwan
Yi-Ling Chen, National Taiwan University, Taiwan
Wen-Huang Cheng, HTC Corp., Taiwan
Ming-Syan Chen, National Taiwan University, Academia Sinica, Taiwan
Shan-An Tsai, HTC Corp., Taiwan

WIP033 | Video Play: Playful Interactions in Video Conferencing for Long-Distance Families with Young Children
Sean Follmer, MIT, USA
Hayes Raffle, Janet Go, NOKIA Research, USA
Hiroshi Ishii, MIT, USA

WIP034 | First-Person Cooking: A Dual-Perspective Interactive Kitchen Counter
Sarah Mennicken, Thorsten Karrer, Peter Russell, Jan Borchers, RWTH Aachen University, Germany

WIP035 | Navigation for the Blind through Audio-Based Virtual Environments
Jaime Sánchez, Mauricio Sáenz, University of Chile, Chile
Alvaro Pascual-Leone, Lotfi Merabet, Harvard Medical School, USA
WIP036 | Interface-to-face: Sharing Information with Customers in Service Encounters
Ohad Inbar, Noam Tractinsky, Ben-Gurion University of the Negev, Israel

WIP037 | On Improving Application Utility Prediction
Joshua Halpern, University of Illinois, USA
Nicholas Jitkoff, Google, USA
Joseph Subida, Karrie Karahalios, University of Illinois at Urbana Champaign, USA

WIP038 | The Tiresias Effect: Feedforward using Light versus Temperature in a Tangible User Interface
Katie Seaborn, Alissa Antle, Simon Fraser University (SFU), Canada

WIP039 | Computational Objects and Expressive Forms: A Design Exploration
Heekyoung Jung, Youngsuk L. Altieri, Jeffrey Bardzell, Indiana University, USA

WIP040 | BioTiSCH: the Interactive Molecular Biology Lab Bench
Florian Echtler, Technische Universität München, Germany
Maximilian Häussler, University of Manchester, United Kingdom
Gudrun Klinker, Technische Universität München, Germany

WIP041 | Digitizer Auditory Graph: Making Graphs Accessible to the Visually Impaired
Stephen Choi, Bruce N. Walker, Georgia Institute of Technology, USA

WIP042 | Free-Space Pointing with Constrained Hand Movements
Theophanis Tsandilas, Emmanuel Dubois, Mathieu Raynal, University of Toulouse, France

WIP043 | The Effect of Preference Elicitation Methods on the User Experience of a Recommender System
Bart P. Knijnenburg, Martijn C. Willemsen, Eindhoven University of Technology, The Netherlands

WIP044 | Mobile Product Customization
Sven Gehring, Markus Löchtermüller, Johannes Schöning, German Research Center for Artificial Intelligence, Germany
Dominic Gerecke, Technical University of Kaiserslautern, Germany
Peter Stephan, Antonio Krüger, German Research Center for Artificial Intelligence, Germany
Michael Rohs, Deutsche Telekom Laboratories, Germany

WIP045 | Toward an Ecological Sensibility: Tools for Evaluating Sustainable HCI
M. Six Silberman, Bill Tomlinson, University of California Irvine, USA

WIP046 | MusicJacket: The Efficacy of Real-time Vibrotactile Feedback for Learning to Play the Violin
Rose M. G. Johnson, Janet van der Linden, Yvonne Rogers, The Open University, UK

WIP047 | Human Performance Modeling for All: Importing UI Prototypes into CogTool
Brett N. Harris, Bonnie E. John, Carnegie Mellon University, USA
Jonathan Brezin, IBM Watson Research Center, USA

WIP048 | Designing for Children: A Fear Therapy Tool
Marco de Sá, Luís Carriço, João Faria, Isabel Sá, University of Lisbon, Portugal

WIP049 | Improving Remote Collaboration through Side-by-Side Telepresence
Paul Tanner, Varnali Shah, Carnegie Mellon University Alumni, USA

WIP050 | Real Time Eye Movement Identification Protocol
Do Hyong Koh, Sandeep Munirikshne Gowda, Oleg V. Komogortsev, Texas State University-San Marcos, USA

WIP051 | Re-Connect: Designing Accessible Email Communication Support for Persons with Aphasia
Abdullah Al Mahmud, Jean-Bernard Martens, Eindhoven University of Technology (TU/e), The Netherlands

WIP052 | Cleanly - Trasheducation Urban System
Inbal Reif, kitchen97.com, Israel
Florian Alt, University of Duisburg-Essen, Germany
Juan David Hincapié Ramos, IT University of Copenhagen, Denmark
Katerina Poteriaykina, University of Haifa, Israel
Johannes Wagner, University of Augsburg, Germany

WIP053 | Extended KLM for Mobile Phone Interaction: A User Study Result
Hui Li, Institute of Human Factors & Ergonomics, P.R. China
Ying Liu, Nokia Research Center, P. R. China
Jun Liu, Tsinghua University, P. R. China
Xia Wang, Nokia Research Center, P. R. China
Yujian Li, Pei-Luen Patrick Rau, Tsinghua University, P. R. China

WIP054 | Graaasp: A Web 2.0 Research Platform for Contextual Recommendation with Aggregated Data
Evgeny Bogdanov, Sandy El Helou, Denis Gillet, Christophe Salzman, Stéphane Sire, Ecole Polytechnique Fédérale de Lausanne, Switzerland

WIP055 | New Media and Folk Music in Rural India
Neha Kumar, Tapan S. Parikh, University of California, Berkeley, USA

WIP056 | Mobile Interaction Techniques for Interrelated Videos
Jochen Huber, Jürgen Steimle, Max Mühlhäuser, Technische Universität Darmstadt, Germany

WIP057 | Design by Physical Composition for Complex Tangible User Interfaces
Tanja Döring, Bastian Pfleging, University of Duisburg-Essen, Germany
Christian Kray, Newcastle University, UK
Albrecht Schmidt, University of Duisburg-Essen, Germany

WIP058 | Personal, Public: Using DIY to Explore Citizen-Led Efforts in Urban Computing
Solomon Bisker, Mark Gross, Donald Carter, Eric Paulos, Stacey Kuznetsov, Carnegie Mellon University, USA
WIP059 | Making Friends by Killing Them: Using Location-Based Urban Gaming to Expand Personal Networks
Josh Coe, Carnegie Mellon University, USA
Monchu Chen, University of Madeira, Portugal

WIP060 | Stimulating Everyday Creativity: Harnessing the Potential of Customizable UIs
Sampada Sameer Marathe, Pennsylvania State University, USA

WIP061 | Design of a Web-Based Therapist Tool to Promote Emotional Closeness
Junia Coutinho Anacleto, Federal University of São Carlos, Brazil
Sidney Fels, University of British Columbia, Canada
Johana Maria Rosas Villena, Federal University of São Carlos, Brazil

WIP062 | Comparing Awareness and Distraction between Desktop and Peripheral-vision Displays
Lindsay Reynolds, Jeremy Birnholtz, Eli Luxenberg, Cornell University, USA
Carl Gutwin, University of Saskatchewan, Canada
Maryam Mustafa, Cornell University, USA

WIP063 | TriggerHunter: Designing An Educational Game For Families With Asthmatic Children
Hwajung Hong, Hee Young Jeong, Rosa I. Arriaga, Gregory Abowd, Georgia Institute of Technology, USA

WIP064 | Asthmon: Empowering Asthmatic Children's Self-Management with a Virtual Pet
Hee Rin Lee, Wassa R. Panont, Brian Plattenburg, Jean-Pierre de la Croix, Dilip Patharachalam, Gregory Abowd, Georgia Institute of Technology, USA

WIP065 | Castling Rays' a Decision Support Tool for UAV-Switching Tasks
Talya Porat, Tal Oron-Gilad, Ben-Gurion University of the Negev, Israel
Jacob Silbiger, Synergy Integration Ltd., Israel
Michal Rottem-Hovev, Israel Air Force, Israel

WIP066 | iLight: Information FlashLight on Objects using Handheld Projector
Kuan-Ju Wu, Mark D. Gross, Carnegie Mellon University, CMU, USA

WIP067 | The Haptic Wheel: Design & Evaluation of a Tactile Password System
Andrea Bianchi, Korean Advanced Institute of Science and Technology, Korea
Ian Oakley, University of Madeira, Portugal
Jong Keun Lee, Dong Soo Kwon, Korean Advanced Institute of Science and Technology, Korea

WIP071 | Towards Predicting Web Searcher Gaze Position from Mouse Movements
Qi Guo, Eugene Agichtein, Emory University, USA

WIP072 | GColl: Enhancing Trust in Flexible Group-to-Group Videoconferencing
Petr Slovák, Pavel Troublí, Petr Holub, Masaryk University, Czech Republic

WIP073 | VibroGlove: An Assistive Technology Aid for Conveying Facial Expressions
Sreekar Krishna, Shantanu Bala, Troy McDaniel, Stephen McGuire, Sethuraman Panchanathan, Arizona State University, USA

WIP074 | Eyebrowse: Real-Time Web Activity Sharing and Visualisation
K. K. Lamberty, Katherine Frolland, Jason Biatek, Stephen Adams, University of Minnesota, Morris, USA

WIP075 | Social Network Games: Exploring Audience Traits
Jieun Sung, Torger Bjornrud, Yu-Hao Lee, D. Yvette Wohn, Michigan State University, USA

WIP076 | Encouraging Awareness of Peers' Learning Activities using Large Displays in the Periphery
K. C. Lamberty, Katherine Frolland, Jason Biatek, Stephen Adams, University of Minnesota, Morris, USA

WIP077 | Opportunities for Computing to Support Healthy Sleep Behavior
Eun Kyong Choe, Julie A. Kientz, Sajanee Halko, Amanda Fonsville, Dawn Sakaguchi, Nathaniel Watson, University of Washington, USA

WIP078 | A Survey to Assess the Potential of Mobile Phones as a Learning Platform for Panama
Elba del Carmen Valderrama Bahamondez, Albrecht Schmidt, Universität Duisburg-Essen, Germany

WIP079 | Measuring User Experience Of Websites: Think Aloud Protocols and an Emotion Word Prompt List
Helen Petrie, John Precious, University of York, UK

WIP080 | Improving the Form Factor of a Wrist-Based Mobile Gesture Interface
James Deen, Seunghoon Lee, BoHao Li, Thad Starner, Georgia Institute of Technology, USA

WIP081 | Sharing Awareness Information Improves Interruption Timing and Social Attraction
Dai Tang, Jeremy Birnholtz, Cornell University, USA
WIP082 | Event Maps: A Collaborative Calendaring System for Navigating Large-Scale Events
Jingtao Wang, University of California Berkeley, USA
Danny Soroker, Chandra Narayanaswami, IBM T.J. Watson Research Center, USA

WIP083 | Guidelines for a Costume Designer’s Workbench
Rachael Bradley, Jennifer Preece, University of Maryland, USA

WIP084 | Touch2Annotate - Generating Better Annotations with Less Human Effort on Multi-Touch Interfaces
Yang Chen, Jing Yang, Scott Barlowe, Dong H. Jeong, University of North Carolina at Charlotte, USA

WIP085 | 3D User Interface Combining Gaze and Hand Gestures for Large-Scale Display
Byungin Yoo, Jae-Joon Han, Changkyu Choi, Kwonju Yi, Sungjoo Suh, Dusik Park, Changyeong Kim, Samsung Electronics Co., LTD., Korea

WIP086 | Exploring Social Dimensions of Personal Information Management with Adults with AD/HD
Jina Huh, Mark S. Ackerman, University of Michigan, USA

WIP087 | Kairos Chat: A Novel Text-Based Chat System that has Multiple Streams of Time
Kanayo Ogura, Yoko Matsumoto, Yoshiyuki Yamauchi, Kazushi Nishimoto, Japan Advanced Institute Science and Technology, Japan

WIP088 | How Do Users Interact with a Pet-Robot and a Humanoid?
Anja Austermann, The Graduate University for Advanced Studies (SOKENDAI), Japan
Seiji Yamada, National Institute of Informatics, Japan
Kotaro Funakoshi, Mikio Nakano, Honda Research Institute, Japan

WIP089 | MobiDev: A Mobile Development Kit for Combined Paper-based and In-situ Programming on the Mobile Phone
Bastian Pfleging, Elba del Carmen Valderrama Bahamondez, Albrecht Schmidt, Martin Hermes, Johannes Nolte, Universität Duisburg-Essen, Germany

WIP090 | Real-Time Eye Gaze Tracking With an Unmodified Commodity Webcam Employing a Neural Network
Weston Sewell, Oleg Komogortsev, Texas State University San Marcos, USA

WIP091 | Grip Sensing in Smart Toys: A Formative Design Method for User Categorization
Manohar Ganesan, Neil W. Russell, Rahul Rajan, Nathan Welch, Tracy L. Westeyn, Gregory D. Abowd, Georgia Institute of Technology, USA

WIP092 | DigestManga: Interactive Movie Summarizing through Comic Visualization
Hiroaki Tobita, Sony CSL, Japan

WIP093 | COMLEX: Visualizing Communication for Research and Saving Lives
William Billingsley, Cindy Gallois, Andrew Smith, Marcus Watson, NICTA, Australia

WIP094 | Behind the Scenes of Google Maps Navigation: Enabling Actionable User Feedback at Scale
Yelena Nakhimovsky, Andrew T. Miller, Tom Dimopoulos, Michael Siliski, Google, USA

WIP095 | Hands Free Mouse: Comparative Study on Mouse Clicks Controlled by Humming
Ondrej Polácek, Ždenek Mikovec, Czech Technical University in Prague, Czech Republic

WIP096 | Locked-out: Investigating the Effectiveness of System Lockouts to Reduce Errors in Routine Tasks
Jonathan Back, Duncan P. Brumby, Anna L. Cox, University College London, UK

WIP097 | The Effect of Avatar Realism of Virtual Humans on Self-Disclosure in Anonymous Social Interactions
Sin-Hwa Kang, Jonathan Gratch, USC Institute for Creative Technologies, USA

WIP098 | A Cross-Device Spatial Workspace Supporting Artifact-Mediated Collaboration in Interaction Design
Florian Geyer, Harald Reiterer, University of Konstanz, Germany

WIP099 | Learning Basic Dance Choreographies with different Augmented Feedback Modalities
Dieter Drobny, Jan Borchers, RWTH Aachen University, Germany

WIP100 | Designing for Collaboration: Improving Usability of Complex Software Systems
Mari-Klara Oja, Bentley University, USA

WIP101 | Arranging Touch Screen Software Keyboard Split-keys based on Contact Surface
Kentaro Go, Leo Tsurumi, University of Yamanashi, Japan

WIP102 | Remote Skincare Advice System Using Life-logs
Maki Nakagawa, Koji Tsukada, Itiro Siio, Ochanomizu University, Japan

WIP103 | Lightweight Selective Availability in Instant Messaging
Mirko Fetter, Julian Seifert, Tom Gross, Bauhaus-University Weimar, Germany
WIP104 | Understanding Information Sharing from a Cross-cultural Perspective
Yurong He, Chinese Academy of Sciences, China
Chen Zhao, Microsoft Research Asia, China
Pamela Hinds, Stanford University, USA

WIP105 | Enhancing Distributed Corporate Meetings with ‘Lightweight’ Avatars
N. Sadat Shami, Li-To Cheng, Steven Rohall, Andrew Sempere, John Patterson, IBM T.J. Watson Research Center, USA

WIP106 | Investigation of Cultural Dependency in Mobile Technology and Older Adults
Sofianiza Abd Malik, Alistair D. N. Edwards, University of York, United Kingdom

WIP107 | Measuring Environments for Public Displays: A Space Syntax Approach
Sheep Dalton, Paul Marshall, Open University, United Kingdom
Ruth Conroy Dalton, University College London, United Kingdom

WIP108 | Evaluating Realistic Visualizations for Safety-related In-car Information Systems
Peter Fröhlich, Raimund Schatz, Peter Leitner, Telecommunications Research Center (FTW), Austria
Stephan Mantler, Virtual Reality and Visualization Research Center (VRVis), Austria
Matthias Baldauf, Telecommunications Research Center (FTW), Austria

WIP109 | Gen X and Y’s Attitudes on Using Social Media Platforms for Opinion Sharing
Bernard J. Jansen, Kate Sobel, The Pennsylvania State University, USA
Geoff Cook, myYearbook.com, USA

WIP110 | Embedding Robotics in Civic Monuments for an Information World
Tarek H. Mokhtar, Keith Evan Green, Ian D. Walker, Tony Threatt, Vidya N. Murali, Akshay Apte, Sumod K. Mohan, Clemson University, USA

WIP111 | Wearable-Object-Based Interaction for a Mobile Audio Device
KwanMyung Kim, Korea Advanced Institute of Science and Technology, Korea
Dongwoo Joo, Korea Science Academy of KAIST, Korea
Kun-Pyo Lee, Korea Advanced Institute of Science and Technology, Korea

WIP112 | Behavioral Assessment and Visualization Tool
Deepak Jagdish, Abbas Attarwala, Ute Fischer, Georgia Institute of Technology, USA

WIP113 | Participatory Design for Sustainable Campus Living
Janet Davis, Grinnell College, USA

WIP114 | Enabling Cross-Device Interaction With Web History
Timothy Sohn, Koichi Mori, Vidya Setlur, Nokia Research Center, USA

WIP115 | PlayWrite: End-User Adaptable Games to Support Adolescent Mental Health
David Coyle, University of Cambridge, United Kingdom
Gavin Doherty, Trinity College Dublin, Ireland
John Sharry, Mater Misericordiae Hospital, Ireland

WIP116 | World-Wide Access to Geospatial Data by Pointing Through The Earth
Erika Reponen, Jaakko Keränen, Hannu Korhonen, Nokia Research Center, Finland

WIP117 | Leveraging Gesture and Voice Data to Improve Group Brainstorming
Deirdre Garrahan, Orit Shaer, Andrey Piplica, Kevin Gold, Wellesley College, USA

WIP118 | A Method to Get Rich Feedbacks from Users in an Interview for Design Concept Decision
Yoonjung Hong, Tek-Jin Nam, Korea Advanced Institute of Science and Technology, South Korea

WIP119 | A Classification Scheme for User Intentions in Image Search
Mathias Lux, Christoph Koffer, Klagenfurt University, Austria
Oge Marques, Florida Atlantic University, USA

WIP120 | An Utterance Attitude Model in Human-Agent Communication: From Good Turn-taking to Better Human-Agent Understanding
Masahide Yuasa, Naoki Mukawa, Koji Kimura, Hiroko Tokunaga, Hitoshi Terai, Tokyo Denki University, Japan

WIP121 | Opportunities And Challenges For Mobile-Based Financial Services In Rural Uganda
Rachel Hinman, Nokia Research Lab, USA
Julius Matovu, Makerere University, Uganda

WIP122 | Beyond - Collapsible Tools and Gestures for Computational Design
Jinha Lee, Hiroshi Ishii, MIT Media Laboratory, USA

WIP123 | Using Concept Maps To Evaluate The Usability Of Apis
Jens Gerken, Hans-Christian Jetter, Harald Reiterer, University of Konstanz, Germany

WIP124 | Interaction Techniques for Hybrid Piles of Documents on Interactive Tabletops
Mohamadreza Khallbeigi, Jürgen Steinle, Max Mühlhäuser, Darmstadt University of Technology, Germany

WIP125 | Bridging the Digital Divide One Tweet at a Time: Twitter-Enabled Devices for Family Communication
Joseph Nesbitt, AnnMarie Thomas, University of St. Thomas, USA
WIP126 | On Presenting Audio-Tactile Maps to Visually Impaired Users for Getting Directions
Devi Archana Paladugu, Zheshen Wang, Baoxin Li, Arizona State University, USA

WIP127 | Real Time Search User Behavior
Bernard J. Jansen, The Pennsylvania State University, USA
Gerry Campbell, Matthew Gregg, Collecta, USA

WIP128 | TAVR: Temporal-Aural-Visual Representation to Convey Imperceptible Spatial Information
Minyoung Song, Chris Quintana, University of Michigan, USA

WIP129 | Toward Modeling Auditory Information Seeking Strategies On The Web
Shari Trewin, John Richards, Rachel Bellamy, IBM T.J. Watson Research Center, USA
Bonnie E. John, Carnegie Mellon University, USA
John Thomas, Cal Swart, Jonathan Brezin, IBM T.J. Watson Research Center, USA

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WIP131 | Heartbeats: A Methodology to Convey Interpersonal Distance through Touch
Troy McDaniel, Daniel Villanueva, Sreekar Krishna, Dirk Colbry, Sethuraman Panchanathan, Arizona State University, USA

WIP132 | Enhancing Navigation Skills through Audio Gaming
Jaime Sánchez, Mauricio Sáenz, University of Chile, Chile
Alvaro Pascual-Leone, Lotfi Merabet, Harvard University, USA

WIP133 | Pico-ing into the Future of Mobile Projector Phones
Max L. Wilson, Simon Robinson, Dan Craggs, Kristian Brimble, Matt Jones, Swansea University, UK

WIP134 | Text 2.0
Ralf Biedert, Georg Buscher, Sven Schwarz, Jörn Hees, Andreas Dengel, DFKI GmbH, Germany

WIP135 | Ubiquitous Drums: A Tangible, Wearable Musical Interface
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WIP136 | Cultural Similarities and Differences in User-Defined Gestures for Touchscreen User Interfaces
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WIP137 | Empowering Products: Personal Identity through the Act of Appropriation
Binaebi Akah, Shaowen Bardzell, Indiana University, USA

WIP138 | Is a “Friend” a Friend? Investigating the Structure of Friendship Networks in Virtual Worlds
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WIP139 | Facilitating Meetings with Playful Feedback
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WIP140 | Competitive Carbon Counting: Can Social Networking Sites Make Saving Energy More Enjoyable?
Derek Foster, University of Lincoln, United Kingdom
Mark Blythe, Paul Cairns, University of York, United Kingdom
Shaun Lawson, University of Lincoln, United Kingdom

WIP141 | Bodies, Boards, Clubs and Bugs: A Study of Bodily Engaging Artifacts
Jakob Tholander, Stockholm University, Sweden
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WIP142 | Let Users Tell the Story: Evaluating User Experience with Experience Reports
Hannu Korhonen, Juha Arrasvuori, Nokia Research, Finland
Kaisa Väänänen-Vainio-Mattila, Tampere University of Technology, Finland

WIP143 | MetAgora - A Meta-Community Approach to guide Users through the Diversity of Web Communities
Felix-Robinson Aschoff, Gerhard Schwabe, University of Zurich, Switzerland

WIP144 | Using Obstructed Theatre with Child Designers to Convey Requirements
Janet C. Read, Daniel Fitton, Emanuela Mazzone, University of Central Lancashire, UK

WIP145 | Does Underlining Links Help or Hurt?
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WIP146 | On the Retrospective Assessment of Users’ Experiences Over Time: Memory or Actuality?
Evangelos Karapanos, Jean-Bernard Martens, Eindhoven University of Technology, Netherlands
Marc Hassenzahl, Folkwang University, Germany

WIP147 | Artex: Artificial Textures from Every-day Surfaces for Touchscreens
Andrew Crossan, John Williamson, Stephen Brewster, University of Glasgow, UK

WIP148 | Designing Graphical Interfaces for Design Rationale Search & Retrieval
Ying Liu, Yan Liang, Soon Chong Johnson Lim, Hong Kong Polytechnic University, China
WIP149 | pixSmix: Visual Ambiguity as a Means of Designing Interpersonal Connection
Kevin Makice, Blue Collar Consulting, USA

WIP150 | Squishy Circuits: A Tangible Medium for Electronics Education
Samuel Johnson, AnnMarie Thomas, University of St. Thomas, USA

WIP151 | Modality is the Message: Intercactivity Effects on Perception and Engagement
S. Shyam Sundar, Qian Xu, Saraswathi Bellur, Jeeyun Oh, Haiyan Jia, Pennsylvania State University, USA

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Sonja Maier, Mark Minas, Universitaet der Bundeswehr Muenchen, Germany

WIP153 | DocBlocks: Communication-minded Visualization of Topics in U.S. Congressional Bills
Yannick Assogba, Irene Ros, Matt McKeon, IBM Research, USA

WIP154 | Investigating an Appropriate Design for Personal Firewalls
Fahimeh Raja, Kirstie Hawkey, Konstantin Beznosov, Kellogg S. Booth, University of British Columbia, Canada

WIP155 | Investigating User Account Control Practices
Sara Motiee, Kirstie Hawkey, Konstantin Beznosov, University of British Columbia, Canada

WIP156 | Sensing Human Activities With Resonant Tuning
Ivan Poupyrev, Disney Research Pittsburgh, USA
Zhiquan Yeo, Disney Research Pittsburgh & Carnegie Mellon University, USA
Josh Griffin, Disney Research Pittsburgh, USA
Scott Hudson, Carnegie Mellon University, USA

WIP157 | Toward a Computationally-Enhanced Acoustic Grand Piano
Andrew McPherson, Youngmoo Kim, Drexel University, USA

WIP158 | Tangible Spin Cube for 3D Ring Menu in Real Space
Hyeongmook Lee, Woontack Woo, GIST U-VR Lab., South Korea

WIP159 | Exploring Cultural Differences in Information Behavior Applying Psychophysiological Methods
Anita Komlodi, UMBC, USA
Károly Hercegfl, Budapest University of Technology and Economics, Hungary

WIP160 | UCom: Spatial Displays For Visual Awareness Of Remote Locations
Ana Luisa Santos, V. Michael Bove, Jr., MIT Media Laboratory, USA

WIP161 | Synthesizing Meaningful Feedback for Exploring Virtual Worlds using a Screen Reader
Bugra Öktay, Eelke Folmer, University of Nevada Reno, USA

WIP162 | Exploring Surround Haptics Displays
Ali Israr, Ivan Poupyrev, Disney Research Pittsburgh, USA

WIP163 | Reuse: Promoting Repurposing through an Online DIY Community
Benny Lin, Elaine M. Huang, University of Calgary, Canada

WIP164 | The Problem of Defining Values: A Lack of Common Ground Between Industry & Academia?
Amanda Rotondo, Nathan G. Freier, Rensselaer Polytechnic Institute, USA

WIP165 | Astrojumper: Motivating Children with Autism to Exercise Using a VR Game
Samantha Finkelstein, Andrea Nickel, Tiffany Barnes, Evan A. Suma, University of North Carolina Charlotte, USA

WIP166 | Graphemes: Self-Organizing Shape-Based Clustered Structures For Network Visualisations
Ross Shannon, University College Dublin, Ireland
Aaron Quigley, University of Tasmania, Australia
Paddy Nixon, University College Dublin, Ireland

WIP167 | Selective Function Of Speaker Gaze before and during Questions: Towards Developing Museum Guide Robots
Yoshinori Kobayashi, Takashi Shibata, Yosuke Hoshi, Yoshinori Kuno, Mai Okada, Keichi Yamazaki, Saitama University, Japan

WIP168 | Communication and Computing in Health Facilities of Southwest Uganda
Melissa R. Ho, University of California Berkeley, USA

WIP169 | A Sketch Recognition Interface that Recognizes Hundreds of Shapes in Course-of-Action Diagrams
Tracy Hammond, Drew Logsdon, Joshua Peschel, Joshua Johnston, Paul Taele, Aaron Wolin, Brandon Paulson, Texas A&M University, USA

WIP170 | Gender and Role Differences in Family-Based Healthy Living Networks
Stephen Kimani, Nilufar Baghaei, Jill Freyne, Shlomo Berkovsky, Dipak Bhandari, Greg Smith, CSIRO, Australia

WIP171 | Remote Interaction for 3D Manipulation
Seungju Han, Hyunjeong Lee, Joohnah Park, Wook Chang, Changyeong Kim, Samsung Advanced Institute of Technology, South Korea

WIP172 | Thermo-Message: Exploring the Potential of Heat as a Modality of Peripheral Expression
Wonjun Lee, Youn-kyung Lim, KAIST, South Korea

WIP173 | Human Social Response toward Humanoid Robot’s Head and Facial Features
Jun Ki Lee, Cynthia Breazeal, MIT, USA

WIP174 | Generating Default Privacy Policies for Online Social Networks
Eran Toch, Norman M. Sadeh, Jason Hong, Carnegie Mellon University, USA
WIP175 | SNAG: Social Networking Games to Facilitate Interaction
Eve Powell, Samantha Finkelstein, Andrew Hicks, University of North Carolina at Charlotte, USA
Thomas Phifer, Winthrop University, USA
Sandhya Charugulla, Christie Thornton, Tiffany Barnes, Teresa Dahlberg, University of North Carolina at Charlotte, USA

WIP176 | The Effect of Eco-Driving System Towards Sustainable Driving Behavior
Heewon Lee, Woohun Lee, Youn-Kyung Lim, Korea Advance Institute of Science and Technology, South Korea

WIP177 | One-Press Control: A Tactile Input Method for Pressure-Sensitive Computer Keyboards
Staas de Jong, Dünya Kircali, Hanna Schraffenberger, Jeroen Jillissen, Alwin de Rooij, Arnout Terpstra, Leiden University, the Netherlands

WIP178 | Indian Cultural Effects on User Research Methodologies
Jack Beaton, Nokia, Inc., USA
Ripul Kumar, Kern Communications, India

WIP179 | A Novel Method to Monitor Driver’s Distractions
Avinash Wesley, Dvijesh Shastri, Ioannis Pavlidis, University of Houston, USA

WIP180 | Input Precision for Gaze-Based Graphical Passwords
Alain Forget, Sonia Chiasson, Robert Biddle, Carleton University, Canada

WIP181 | Classifying Web Queries by Topic and User Intent
Bernard J. Jansen, Danielle Jansen, Pennsylvania State University, USA

WIP182 | Designing a Touch-Screen SenseCam Browser to Support an Aging Population
Niamh Caprani, Aiden R. Doherty, Hyowon Lee, Alan F. Smeaton, Noel E. O’Connor, Cathal Gurrin, Dublin City University, Ireland

WIP183 | Modeling the Effect of Habituation on Banner Blindness as a Function of Repetition and Search Type: Gap Analysis for Future Work
Felix Portnoy, Gary Marchionini, University of North Carolina Chapel Hill, USA
Aldebaran Robotics – Booth 25

NAO is a humanoid robot developed and manufactured by Aldebaran Robotics, based in Paris, France. He’s a 58 cm tall friendly robot that includes a computer and networking capability at its core. Delivered with a full set of development tools, NAO addresses the needs of universities and research labs around the world.

Bloomberg L. P. (Champion Sponsor) Booth 1

Bloomberg is the leading global provider of data, news and analytics. The BLOOMBERG TERMINAL and Bloomberg’s media services provide real-time and archived financial and market data, pricing, trading, news and communications tools in a single, integrated package to corporations, news organizations, financial and legal professionals and individuals around the world.

CHI*Atlanta – Booth 30

A local chapter of SIGCHI, CHI*Atlanta is Atlanta’s largest and most active forum for human computer interaction professionals. Learn more about us and get an insider’s guide to the Atlanta area.

Create with Context – Booth 12

Create with Context is a Silicon Valley-based research, innovation and design company focused on everything digital. Working with companies like Yahoo!, Adobe, and Panasonic, we like to say that we make digital human.

Eye Tech Digital Systems – Booth 20

EyeTech develops flexible eye tracking hardware and software solutions. The new long distance eye gaze tracking system tracks a user’s gaze from up to 6 feet away for screen navigation or for gaze research. EyeTech’s free API enables developers to design custom eye tracking solutions.

Georgia Tech – Booth 31

The GVU Center at Georgia Tech brings together disciplines as diverse as Computing, Digital Media, Music, Psychology, and Industrial Design engaged in leading-edge research. Come learn about GVU and the breadth of educational opportunities at GT.

Google (Champion Sponsor) Booth 9

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, whether we are pushing the boundaries of our products, researching alternative energies, or devising new ways to interact with clients. Come by our booth, meet our engineers, demo some new products and learn about some of the great opportunities we have at Google.

John Wiley & Sons – Booth 23

Founded in 1807, John Wiley & Sons, Inc. is an independent, global publisher of print and electronic products. Wiley specializes in scientific and technical books, journals, textbooks and education materials, and professional and consumer books and subscription services. www.wiley.com

LC Technologies, Inc. – Booth 10

A range of eye tracking technologies: The EyeFollower that provides automatic eye acquisition, binocular tracking, and 0.45-degree gazepoint tracking accuracy throughout 20x12x15 inch volume. Also, an inexpensive plug-and-play system and state-of-the art NYAN analysis software.

Microsoft Corp. (Champion Sponsor) Booth 7 & 8

At Microsoft, our customers inspire and motivate us every day by creating business solutions, developing breakthrough ideas, and having fun with our software and tools. Come by our booth to experience our demos and learn about new technologies. We’d also like the chance to meet like-minded UX enthusiasts, so do stop by and tell us about yourself.

MIT Press – Booth 29

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.

Morgan Claypool – Booth 15

Morgan & Claypool Publishers presents Synthesis, an innovative information service for the research, development, and educational community in computer and information science. The exhibit includes new publications in our HCI and Information series, and demonstration of the digital library.

Morgan Kaufmann – Booth 26

Morgan Kaufmann is a leading publisher in User Experience and Human-Computer Interaction books for both researchers and practitioners. Visit mkp.com/hci for the complete Morgan Kaufmann UX/HCI catalog, and make sure to check out the NEW Sketching User Experiences: The Workbook coming soon!

now publishers – Booth 3

Publishers of the highly acclaimed FOUNDATIONS AND TRENDS journals. Peer-reviewed, cutting edge surveys, reviews and tutorials in human computer interaction. Visit our booth to browse the online library. All print titles available for the special CHI price of $35.

Oracle – Booth 4

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 Electronics Co. LTD – Booth 5

The UX Center of Samsung Electronics presents its recent research results related to user experience and new interaction developments.
Seeing Machines – Booth 13

faceLAB v5 delivers flexible eye tracking for CHI. faceLAB offers high fidelity eye tracking in both on-screen applications as well as 3D environments, such as simulators. Tightly integrated analysis tools deliver automated analysis of human attention and cognitive workload – in real time.

Smart Eye – Booth 2

Smart Eye AB provides eye tracking systems with two to six cameras, which can be mounted independently, to be adapted to your planned experimental setup. It has a very high accuracy for head, eyelid and gaze tracking and the largest head box.

Springer – Booth 11

Stop by the Springer booth to get acquainted with our multi-format publishing model. Get hands-on experience with Springer ebooks on one of the world’s largest STM content platforms, SpringerLink. Test drive highlights online, in print, and on ebook readers. Ask about your Springer MyCopy.

Taylor & Francis – Booth 6

With over 200 years publishing experience, international offices and over 1100 titles in print, Taylor & Francis is a world leading publisher of academic journals. All Taylor & Francis journals have their own web pages with full information - visit www.tandf.co.uk/journals/ for a closer look.

TechSmith Corporation – Booth 24

TechSmith provides usability testing software when and how you need it. You love your product, but does your customer? Conduct everything from usability testing to focus groups and in-depth interviews with Morae. Free trials and demos at our booth!

Tobii Technology – Booth 27 & 28

Tobii Technology is the world leader in eye tracking for usability and market research applications. Tobii allows you to know where participants are looking in real-time and aggregate the data of multiple participants. Don’t guess or count on participants to tell you what they think - know it with Tobii eye tracking!

UserZoom – Booth 16

UserZoom is the leading online user experience research company. We offer an on-demand software solution for businesses to manage and conduct sophisticated online research projects, such as remote usability tests, online surveys and card sorting studies.

Vancouver/CHI 2011 – Booth 21

Stop by the Vancouver booth and learn more about the site for CHI 2011. Next year’s conference is in gorgeous, energetic, sophisticated Vancouver B.C., a city renowned for its innovation in sustainability, accessibility and inclusivity. The New York Times calls it, "a liquid city, a tomorrow city, equal parts India, China, England, France, and the Pacific Northwest."
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ZHAI
Lobby Level: Hyatt Regency Atlanta

Atrium Tower

to Peachtree Mall

FedEx

Front Desk

Gift Shop

International Tower
(ACCESSIBLE FROM ATRIUM TOWER AT THIS LEVEL)

Main Entrance

Concierge/Bell

Shows Connection Between Towers
The Commons Map—Grand Hall

Interactivity Booths
14i Interactive Learning with the Simon Robot
17i Pinch-the-Sky Dome: Freehand Multi-Point Interactions with Immersive Omni-Directional Data
18i The Elocuter: I Must Remind You We Live in DADA Times
19i Critical Gameplay: Software Studies in Computer Gameplay
21i Recognizing Shapes and Gestures Using Sound as Feedback
33i Visible and Controllable RFID Tags
34i Robotany: Breeze
35i The EmotiChair: An Interactive Crossmodal Tactile Music Exhibit
36i Exploring Interfaces to Species Identification
36ai Augmented Reality Games

Entrance
Grand Hall
Mon. - Tues.
Student Research Competition (SRC 1 - 21)

Lobby Posters
Wed. - Thurs.
Student Design Competition (SDC 1 - 12) and Workshops

37i Shape-Changing Mobiles: Tapering in Two-Dimensional Deformational Displays
Weight-Shifting Mobiles: Automatic Balancing in Mobile Phones
Weight-Shifting Mobiles: Two-Dimensional Gravitational Displays in Mobile Phones

38i iFeel(IM): Innovative Real-Time Communication System with Rich Emotional and Haptic Channels

Hanover A
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