	9:00–10:00	10:00–10:30	11:30–13:00	14:30–16:00	16:30–18:00
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= 15 minutes = 30 minutes = unscheduled time

COMMONS

Exhibits, Interactivity, & Info Booth
10:30–18:00

SPECIAL EVENTS

Spotlight on Work-in-Progress Posters (#105-156)
10:30–11:30
Concourse

SIGCHI Member Meeting
18:10–19:30
B1-B4

Hospitality Events
18:30–20:30
Marriott Hotel, Fairmont Hotel

20:30–22:30
Tech Museum

■ AWARD TALK | CIVIC AUDITORIUM

LIFETIME ACHIEVEMENT AWARD: JIM FOLEY

SESSION CHAIR: Stuart K. Card, *PARC,* USA

Past, Present, and Future of HCC Education: What We Teach, How We Teach

Jim Foley, *Georgia Institute of Technology,* USA

I have several goals with this talk. One is to briefly trace the evolution of HCI education from the 1970s to the present, including the development of a broader emphasis on Human-Centered Computing. The second goal is to describe my current research in re-designing how to teach HCI – by taking the lecture out of the classroom onto the web, so that class can be more about doing and discussing and less about listening. Our classroom experiments show that students learn more and better enjoy this approach as opposed to a more lecture-oriented style. Also, our lab studies show that students learn more from watching web lectures that include video versus only audio, PowerPoint, table of contents and viewing controls. Third, I describe our evolving HCC Educational Digital Library (EDL) – a resource for teachers and learners – and the ResultMap visualization used in the library.

■ CHI MADNESS | CIVIC AUDITORIUM

Patrick Baudisch, *Microsoft,* USA
Gonzalo Ramos, *University of Toronto,* Canada

CHI's 30 second Madness, which premiered in Montréal, returns to give everyone a lightning speed overview of the day's program.

INTERACTIVE SESSION | CIVIC AUDITORIUM

WEB 2.0 AND THE ENTERPRISE: THE BUSINESS IMPACT OF MODERN TECHNOLOGICAL APPROACHES TO WEB APPLICATION DESIGN

MODERATOR:
Jon Kolko, *Savannah College of Art & Design,* USA

PANELISTS:
Jeff Veen, *Google and Founder of Adaptive Path,* USA
Jonathan Grubb, *Chief Product Officer, Satisfaction – Rubyred Labs,* USA

"Web 2.0" has become the accepted phrase used to refer to newer, more fluid client/server interactions on the web, as combined with a philosophical view of user-empowerment and shared content ownership. This session will bring together several individuals responsible for the application of Web 2.0 strategies in the enterprise. They will discuss the implications these advanced web approaches have on business-centered web application development and will share insight into the cultural, business, and technological issues raised by these new approaches to product development.

PAPERS | ROOM: A1

VIDEO

SESSION CHAIR: Wendy Mackay, *INRIA,* France

PAPER | Consuming Video on Mobile Devices

Kenton O'Hara, *Hewlett-Packard,* UK
April Slayden Mitchell, Alex Vorbau, *Hewlett-Packard,* USA

The paper presents a user study of everyday practices with mobile video devices, identifying underlying social motivations and values. Implications for adoption and design of mobile video technologies are discussed.

PAPER | Effects of Audio and Visual Surrogates for Making Sense of Digital Video

Yaxiao Song, Gary Marchionini, *University of North Carolina, Chapel Hill,* USA

This paper provides strong evidence that combined visual-audio surrogates are effective, are strongly preferred, and do not penalize efficiency; and that audio surrogates are better than visual surrogates alone.

PAPER | Watching Together: Integrating Text Chat with Video

Justin D. Weisz, Sara Kiesler, Hui Zhang, Yuqing Ren, Robert E. Kraut, *Carnegie Mellon University,* USA
Joseph A. Konstan, *University of Minnesota,* USA

Investigates the shared experience of live streaming video online with chat. Demonstrates that chat is distracting but does not impede the user experience and improves social relationships.

PAPERS | ROOM: A2

SECURITY

SESSION CHAIR: Carlos Jensen, *Oregon State University,* USA

PAPER | Pictures at the ATM: Exploring the Usability of Multiple Graphical Passwords

Wendy Moncur, *Aberdeen University,* UK
Gregory Leplatre, *Napier University,* UK

Extends graphical authentication mechanism research by evaluating the memorability of multiple graphical passwords. Supports practitioners seeking to establish usable alternatives to knowledge-based approaches to security.

PAPER | Password Sharing: Implications for Security Design Based on Social Practice

Supriya Singh, Anuja Cabraal, *Royal Melbourne Institute of Technology & Smart Internet Technology CRC,* Australia
Catherine Demosthenous, *Griffith University & Smart Internet Technology CRC,* Australia
Gunela Astbrink, Michele Furlong, *GSA Information Consultants & Smart Internet Technology CRC,* Australia

Security design needs to go beyond the individual to users in their social and cultural context to take into account the common practice of sharing domestic banking access codes.

PAPER | Protecting People from Phishing: The Design and Evaluation of an Embedded Training Email System

Ponnurangam Kumaraguru, Yong Rhee, Alessandro Acquisti, Lorrie Cranor, Jason I. Hong, Elizabeth Nunge, *Carnegie Mellon University,* USA

We present the design and evaluation of an email-based embedded training system that teaches people how to protect themselves from phishing attacks, and outline some design principles for such systems.

PAPERS | ROOM: A3

EMOTION & EMPATHY

SESSION CHAIR: Diane Schiano, *PARC,* USA

NOTE | Studying Antecedents of Emotional Experiences in Interactive Contexts

Sascha S. Mahlke, Manfred M. Thüring, *Berlin University of Technology,* Germany

Presents a comprehensive approach to the experimental study of user experience processes and illustrates its application by an exemplary study on variations of mobile digital audio player design properties.

NOTE | Expressing Emotion in Text-Based Communication

Jeffrey T. Hancock, Chris Landrigan, Courtney Silver, *Cornell University,* USA

The present study examines how positive and negative affect is expressed and assessed in computer-mediated communication, providing insight into how emotion is linguistically enacted in text-based conversation.

PAPER | Patterns of Empathy in Online Communication

Ulrike Pfeil, Panayiotis Zaphiris, *City University London,* UK

We clarify the phenomenon of online empathy. Our code scheme goes beyond existing research and provide a framework for analyzing the nature and degree of empathy within an online community.

PAPER | Exploring Affective Design for Physical Controls

Colin Swindells, Karon E. MacLean, Kellogg S. Booth, Michael J. Meitner, *University of British Columbia,* Canada

Case-study of emotional design for physical controls. Assists designers in i) improving emotional appropriateness and ii) better understanding resulting performance trade-offs, when designing ubiquitous computing systems.

■ PAPERS | ROOM: A4 & A5

COLLABORATION AT WORK

SESSION CHAIR: Wendy A. Kellogg, *IBM,* USA

NOTE | Koala: Capture, Share, Automate, Personalize Business Processes on the Web

Greg Little, *MIT,* USA
Tessa Lau, Allen Cypher, James Lin, Eben Haber, Eser Kandogan, *IBM,* USA

Koala presents a new paradigm in end-user programming: programming by demonstration where recorded actions are human readable and editable; data stores to automatically personalize procedures; and a wiki for procedures.

NOTE | Understanding Memory Triggers for Task Tracking

A. J. Bernheim Brush, Brian R. Meyers, Desney S. Tan, Mary Czerwinski, *Microsoft,* USA

Describes an observational field study of status report writing. Presents implications for the design of computer assisted time tracking systems that support personal introspection and status report writing.

PAPER | Recent Shortcuts: Using Recent Interactions to Support Shared Activities

John C. Tang, James Lin, Jeffrey S. Pierce, *IBM,* USA
Steve Whittaker, *Sheffield University,* UK
Clemens Drews, *IBM,* USA

We describe an empirical study identifying opportunities to support user work on shared activities through improved access to recently used computer objects and present a prototype to realize those opportunities.

PAPER | A Study of Out-of-Turn Interaction in Menu-Based, IVR, Voicemail Systems

Saverio Perugini, Taylor J. Anderson, William F. Moroney, *University of Dayton,* USA

Presents a study of an interaction technique for IVRs which explores a new dimension of the design space. Results indicate that this technique saves the user time and improves usability.

■ COMPETITION | A8

STUDENT DESIGN COMPETITION

SESSION CHAIRS:
Steven A. Wall, *University of Glasgow,* UK
Ilona Posner, *Usability Consultant,* Canada

JUDGES:
Richard Banks, *Microsoft,* UK
Apala Lahiri Chavan, *Human Factors International,* India
Silvia Zimmermann, *Usability.ch,* Switzerland

This is the third and final round of the CHI 2006 Student Design Competition. This session offers the four finalist student teams the opportunity to present their design projects to CHI attendees. A panel of expert judges will evaluate and score the projects on the basis of this presentation, considering the design process as well as the final product.

■ PAPERS | ROOM: B1-B4

TAGS, TAGGING, & NOTETAKING

SESSION CHAIR: Gina Venolia, *Microsoft,* USA

PAPER | Why We Tag: Motivations for Annotation in Mobile and Online Media

Morgan G. Ames, *Yahoo!, Stanford University, & University of California, Berkeley,* USA
Mor Naaman, *Yahoo! & Stanford University,* USA

Provides a taxonomy of motivations for tagging photographs, using photo-sharing site Flickr and prototype cameraphone application ZoneTag. Gives designers and researchers methods for encouraging annotation in tagging and image applications.

PAPER | Selection-Based Note-Taking Applications

Aaron Bauer, Kenneth R. Koedinger, *Carnegie Mellon University,* USA

Presents a study comparing the note-taking behaviors and learning outcomes of four different note-taking applications. Describes implications for the design of selection-based note-taking applications.

NOTE | Mobile Interaction with Visual and RFID Tags – A Field Study on User Perceptions

Kaj Mäkelä, *Nokia,* USA
Sara Belt, *University of Oulu,* Finland
Dan Greenblatt, *Georgia Institute of Technology,* USA
Jonna Häkkilä, *Nokia,* Finland

Our field study of 50 users charts existing user perceptions on mobile interaction with RFID and visual tags and reveals potential usability risks related to them.

NOTE | Getting Our Head in the Clouds: Toward Evaluation Studies of Tagclouds

A. W. Rivadeneira, *University of Maryland,* USA
Daniel M. Gruen, Michael J. Muller, David R. Millen, *IBM,* USA

Two studies explore impact of tagclouds' textual and positional attributes on task effectiveness, leading toward a paradigm for tagcloud evaluation. Can help researchers and designers to improve social software displays.

■ INTERACTIVITY | ROOM: C2

ADAPTATION & AUGMENTATION

SESSION CHAIR: Tom Igoe, *New York University,* USA

Interactive Exploration of City Maps with Auditory Torches

Wilko Heuten, Niels Henze, *OFFIS,* Germany
Susanne Boll, *University of Oldenburg,* Germany

To provide a nonvisual access to map information, we developed an interactive auditory city map, which uses 3D nonspeech sound to convey the position, shape, and type of geographic objects. We designed a virtual walk-through, equipped the user with an auditory torch, and introduced a bird's eye view on the auditory map. Our evaluation shows that our approaches enable the user to gain an understanding of the explored environment.

BluetunA: Let Your Neighbor Know What Music You Like

Stephan Baumann, *DFKI GmbH,* Germany
Arianna Bassoli, *The London School of Economics,* UK
Björn Jung, *Technical University of Kaiserslautern,* Germany
Martin Wisniowski, *Academy of Media Arts, Cologne,* Germany

BluetunA is an application running on Bluetooth-enabled mobile phones that allows users to share information about their favorite music. With BluetunA people can select a list of favorite artists or songs and see who else in proximity share their taste in music, or they can search whom nearby has selected specific artists, and check out what other preferences in terms of music these people have. Moreover, BluetunA users can exchange messages with each other over Bluetooth, connect to the Internet to download their profile and obtain music recommendations from Last.fm website.

Dreaming of Adaptive Interface Agents

Bill Tomlinson, Eric Baumer, Man Lok Yau, Paul Mac Alpine, Lorenzo Canales, Andrew Correa, Bryant Hornick, Anju Sharma, *University of California, Irvine,* USA

In the project described here, the system adapts when the user allows it to go to sleep long enough to have a dream. In addition, the dream itself is a visualization of the transformation of the interface, so that a person may see what changes have occurred.

imPulse

Gilad Lotan, Christian Croft, *ITP – NYU,* USA

imPulse is a modular design object that senses pulse and allows users to wirelessly transmit their heartbeat rhythms to companion imPulse units. By synchronizing light and vibrations with users' personal heartbeats, these devices create intimacy across distance.

The Mixed Reality Book: A New Multimedia Reading Experience

Raphael Grasset, Mark Billinghurst, Andreas Duesner, Hartmut Seichter, *HIT Lab NZ, & University of Canterbury,* New Zealand

We are introducing a new type of digitally enhanced book which symbiotically merges different type of media in a seamless approach. By keeping the traditional book (and its affordances) and visually and aurally enhancing it, we are hoping to provide a highly efficient combination of the physical and digital world. Our solution is based on recent developments in computer vision tracking, advanced GPU graphics, and spatial sound rendering. The demonstration will also show the collaborative possibilities of the system by allowing other users to be part of the story.

■ SPECIAL INTEREST GROUP | ROOM: C4

ENGINEERING COMMUNITY SIG

MODERATORS:
Alan Blackwell, *Cambridge University,* UK
John 'Scooter' Morris, *University of California, San Francisco,* USA

This SIG will provide a forum for people interested in bringing the best of the field of engineering to the field of HCI.

INTERACTIVE SESSION | CIVIC AUDITORIUM

INDUSTRIAL DESIGN: CHALLENGES AND SUCCESSES TOWARDS AN INTEGRATED PRODUCT DEVELOPMENT PROCESS

MODERATOR:
David Gilmore, *Intel,* USA

PANELISTS:
Jeremy Ashley, *Vice President User Experience, Oracle,* USA
Tucker Viemeister, *Vice President Creative, Studio Red,* USA
Tim Wood, *Creative Director, Kodak,* USA

Inexpensive components and increased user demand have led to an influx in consumer electronics in many of our daily lives. These physical products commonly have both a physical interface and a digital interface. This session will examine the converging worlds of Industrial Design and Interaction Design; the invited speakers will discuss their thoughts, experiences, and concerns as related to a holistic view of product development – development that incorporates a single team of designers responsible for a seamless physical and digital user experience.

PAPERS | ROOM: A1

MULTIMODAL INTERACTIONS

SESSION CHAIR: Edward Cutrell, *Microsoft,* USA

PAPER | Supporting Multi-Point Interaction in Visual Workspaces

Garth Shoemaker, *Idelix Software,* Canada
Carl Gutwin, *University of Saskatchewan,* Canada

Introduces the concept of a multi-point interaction task. Presents a design framework and three novel techniques for supporting these tasks. Demonstrates that the new techniques are superior to standard methods.

PAPER | Multimodal Redundancy Across Handwriting and Speech During Computer Mediated Human-Human Interactions

Edward C Kaiser, Paulo Barthelmess, Candice Erdmann, Phil Cohen, *Adapx,* USA

We show that public presenters typically say what they handwrite, redundantly. We argue that this focuses attention on dialogue-critical terms, and describe leveraging that redundancy for unsupervised, dynamic vocabulary learning.

EXPERIENCE REPORT | Minimizing Modality Bias When Exploring Input Preferences for Multimodal Systems in New Domains: The Archivus Case Study

Agnes Lisowska, Susan Armstrong, *University of Geneva,* Switzerland
Martin Rajman, *Ecole Polytechnique Federal de Lausanne,* Switzerland
Mireille Betrancourt, *University of Geneva,* Switzerland

In this paper we discuss the problems faced when trying to design an evaluation protocol for a multimodal system using novel input modalities and in a new domain. In particular, we focus on the problem of trying to minimize bias towards certain modalities and interaction patterns that might be introduced by experimenters in the instructions given to users which explain how the system can be used.

PAPERS | ROOM: A2

DISTRIBUTED INTERACTION

SESSION CHAIR: Susan Fussell, *Carnegie Mellon University,* USA

PAPER | An Empirical Study of the Use of Visually Enhanced VoIP Audio Conferencing: The Case of IEAC

Xianghua Ding, *University of California, Irvine,* USA
Thomas Erickson, Wendy A. Kellogg, Stephen Levy, James Christensen, Jeremy Sussman, Tracee Vetting Wolf, William E. Bennett, *IBM,* USA

The first study of the use of a widely deployed visually enhanced VoIP audio conferencing system. Sheds light on how and why callers use the visualization to achieve their ends.

PAPER | Voyagers and Voyeurs: Supporting Asynchronous Collaborative Information Visualization

Jeffrey Heer, *University of California, Berkeley,* USA
Fernanda B. Viégas, Martin Wattenberg, *IBM,* USA

Describes mechanisms for asynchronous collaboration around interactive data visualizations. Includes novel collaboration mechanisms and design considerations for interactive visual media and presents observations of social data analysis processes.

PAPER | Turn it This Way: Grounding Collaborative Action with Remote Gestures

David Kirk, Tom Rodden, *University of Nottingham,* UK
Danae Stanton-Fraser, *University of Bath,* UK

Generates a deeper understanding of the effects of remote gesturing technologies on the grounding of collaborative language, deriving from this significant implications for the development and deployment of these technologies.

PAPERS | ROOM: A3

LEARNING & EDUCATION

SESSION CHAIR: Deborah Tatar, *Virginia Polytechnic Institute and State University,* USA

PAPER | The Validity of a Virtual Human Experience for Interpersonal Skills Education

Kyle Johnsen, Andrew Raij, Amy Stevens, *University of Florida,* USA
D. Scott Lind, *Medical College of Georgia,* USA
Benjamin Lok, *University of Florida,* USA

We add critical validation results using life-size interactive virtual humans for interaction skills education. Readers gain insight into virtual humans, how they can be validated, and the benefits of validation.

PAPER | Modeling and Understanding Students' Off-Task Behavior in Intelligent Tutoring Systems

Ryan S. J. D. Baker, *University of Nottingham,* UK

Presents a machine-learned model and motivational profile of off-task behavior in an intelligent tutoring system. Can be used to drive adaptation to off-task behavior and to inform design.

NOTE | Improvisation Principles and Techniques for Design

Elizabeth Gerber, *Stanford University,* USA

This paper explores the application of the principles and techniques of improvisation to the practice of design, demonstrating potential successful outcomes at the individual and group level in design.

NOTE | Supporting Multidisciplinary Collaboration: Requirements from Novel HCI Education

Piotr D. Adamczyk, Michael B. Twidale, *University of Illinois, Urbana-Champaign,* USA

Suggests reasons for the poor rate of adoption of existing collaborative support tools and outline specific suggestions for directions in both ethnographic studies of multidisciplinary collaboration and collaborative systems design.

PAPERS | ROOM: A4 & A5

DESIGNING FOR SPECIFIC CULTURES

SESSION CHAIR: John C. Thomas, *IBM,* USA

PAPER | How HCI Interprets the Probes

Kirsten Boehner, Janet Vertesi, Phoebe Sengers, *Cornell University,* USA
Paul Dourish, *University of California, Irvine,* USA

Analyses the use of cultural probes and allied methods in HCI design practice. Provides an alternative account of the relationship between data gathering and knowledge production in HCI.

PAPER | Social Dynamics of Early Stage Co-Design in Developing Regions

Divya Ramachandran, Matthew Kam, *University of California, Berkeley,* USA
Jane Chiu, *Google,* USA
John Canny, *University of California, Berkeley,* USA
James L. Frankel, *Frankel and Associates, Inc.,* USA

Generalizes lessons from three field studies for effectively engaging local stakeholders in developing regions in early stage design based on using technology artifacts, and observations of social networks in communities.

PAPER | Localized Iterative Design for Language Learning in Underdeveloped Regions: The PACE Framework

Matthew Kam, Divya Ramachandran, Varun Devanathan, *University of California, Berkeley,* USA
Anuj Tewari, *Dhirubhai Ambani Institute of Information and Communication Technology,* India
John Canny, *University of California, Berkeley,* USA

A framework and process for localizing language learning software for underdeveloped regions. Facilitates the rapid, cost-effective design of usable and pedagogically effective language learning software by promoting reuse and scalability.

EXPERIENCE REPORTS | ROOM: A8

DEVELOPMENT PROCESS

SESSION CHAIR: Kumiyo Nakakoji, *University of Tokyo & SRA-KTL Inc.*, Japan

Software Design and Engineering as a Social Process

William Stubblefield, Tania Carson, *Sandia National Laboratories,* USA

Traditionally, software engineering processes are based on a formalist model that emphasizes strict documentation, procedural, and validation standards, which can be a poor fit for multidisciplinary research and development communities. We have approached this dilemma through a process model derived from theories of collaborative work rather than formal process control.

UI Toolkit for Non-Designers in the Enterprise Applications Industry

Liang-Cheng Lin, *Microsoft,* USA
Wai On Lee, *FLOW UX Design & Research,* USA

This report describes a user interface (UI) toolkit used for prototyping by non-designers. The toolkit enables the development of standardized UI wireframes and click-through prototypes that comply with User Experience UI style guides and design specifications.

Evolution of a Concept: From Technology to End-User to Enterprise

Lynne Brotman Karmin, Doree Seligmann, Mike Sammon, Ed Peebles, *Avaya Labs Research,* USA

We describe our experiences designing and trialing a hands-free, context-aware, mobile communications system for enterprise workers. Our concept, inspired by a new consumer technology, was designed with a heavy focus on the end-user.

PAPERS | ROOM: B1-B4

MOBILE KITS & STUFF

SESSION CHAIR: Yvonne Rogers, *Open University,* UK

PAPER | iStuff MobilRapidly Prototyping New Mobile Phone Interfaces for Ubiquitous Computing

Rafael Ballagas, Faraz Memon, Rene Reiners, Jan Borchers, *RWTH Aachen University,* Germany

Introduces the first toolkit for rapid prototyping of sensor-based interfaces for existing mobile phones. Provides a low threshold and high ceiling for prototyping, as demonstrated through examples and an evaluation.

PAPER | Appropriation of a MMS-Based Comic Creator: From System Functionalities to Resources for Action

Antti Salovaara, *Helsinki Institute for Information Technology,* Finland

Analyses users' appropriation processes in a field trial of a mobile comic strip creator. Suggests resources as an analytical concept to understand how to design system functionalities to support appropriation.

PAPER | Mobile Kits and Laptop Trays: Managing Multiple Devices in Mobile Information Work

Antti Oulasvirta, Lauri Sumari, *Helsinki Institute for Information Technology,* Finland

Reports that mobile workers migrate work across devices and describes the involved problems and strategies. This can help us understand how more flexible management of multiple devices can be supported.

ALT.CHI | ROOM: C2

LIFE ON MARS: HCI IN SPACE, CYBERSPACE, AND BEYOND

SESSION CHAIR:
Lars Erik Holmquist, *Swedish Institute of Computer Science,* Sweden

Challenges in Human-Computer Interaction for Manned Mars Exploration (30 min)

Kim Binsted, *University of Hawaii,* USA

A seven-member crew (including the author) will spend four full months at the Flashline Mars Arctic Research Station (FMARS) in Haughton Crater on Devon Island in the Canadian Arctic, in a Mars manned exploration simulation. The simulation will be as realistic as possible: limited water, cramped quarters, going outside in EVA (extra-vehicular activity) suits only, preserved food, etc. The author will present remotely from the FMARS habitat, giving a tour of the facility and its equipment, and discuss various human-computer interaction issues.

Augmented Nature: Activated, Actuated, and Animated Small Natures with Pervasive Computers (20 min)

Hiroya Tanaka, Yusuke Murata, *Keio-University,* Japan

This paper proposes our novel way to design new-style "nature-mediated" interactive gadgets. It can also be called "computer-embedded small natures". We adopted small, natural and inorganic earth materials such as rough stones (on the street) and raw shells (on the beach), and embedded small micro-controllers into them for giving interactive functions.

Full-Context Videos for First-Time, Non-Literate PC Users (20 min)

Indrani Medhi, Kentaro Toyama, *Microsoft,* India

Following previous work focused on non-literate users, we observed that in spite of our subjects' understanding of the UI mechanics, they experienced barriers beyond illiteracy in interacting with the computer: lack of awareness of what the PC could deliver, fear and mistrust of the technology, and lack of comprehension about how information relevant to them was embedded in the PC. In this paper, we address these challenges with full-context video, which includes dramatizations of how a user might use the application and how relevant information comes to be contained in the computer, in addition to a tutorial of the UI.

Power of the Few vs. Wisdom of the Crowd: Wikipedia and the Rise of the Bourgeoisie (20 min)

Aniket Kittur, *University of California, Los Angeles,* USA
Ed H. Chi, Bryan A. Pendleton, Bongwon Suh, *PARC,* USA
Todd Mytkowicz, *University of Colorado, Boulder,* USA

In this study we examined how the influence of "elite" vs. "common" users changed over time in Wikipedia. The results suggest that although Wikipedia was driven by the influence of "elite" users early on, more recently there has been a dramatic shift in workload to the "common" user. We also show the same shift in del.icio.us, a very different type of social collaborative knowledge system

■ SPECIAL INTEREST GROUP | ROOM: C4

RESEARCH COMMUNITY SIG

MODERATORS:
David Gilmore, *Intel,* USA
Desney S. Tan, *Microsoft,* USA

In this SIG, we will focus on lessons learned from the last 25 years as well as discussing how we can continue to develop these tracks as we move forward. Specifically, we will explore the roles of the various archival (e.g. papers, notes) and non-archival (e.g. posters, demos, alt.chi) tracks, and what they mean both to members of the community and to people outside the community (e.g. many tenure committees). Furthermore, we will discuss how we might expand the tracks to support non-traditional research, and how we can improve the review process so that we continue to accept the most innovative and impactful content.

INTERACTIVE SESSION | CIVIC AUDITORIUM

SEMANTIC WEB HCI: DISCUSSING RESEARCH IMPLICATIONS

PANELISTS:
Duane Degler, *IPGems,* USA
Scott Henninger, *University of Nebraska, Lincoln,* USA
Lisa Battle, *Design for Context,* USA

Semantic Web progress is very active – and this past year shows a much greater focus on the subject of user interaction. W3C leaders talk about the importance and "grand challenges" for user interaction. Workshops showcase more well-developed projects and innovative interaction designs. A W3C mailing list has begun. But what are the implications for the HCI community? What research and practice contributions can be made and what relationships can be fostered with the semantic web research community? This collaborative, interactive session will give CHI participants a chance to discuss the issues that have surfaced at recent semantic web workshops.

PAPERS | ROOM: A1

NOVEL NAVIGATION

SESSION CHAIR: Anind K. Dey, *Carnegie Mellon University,* USA

PAPER | Command Strokes With and Without Preview: Using Pen Gestures on Keyboard for Command Selection

Per Ola Kristensson, *Linköpings Universitet,* Sweden
Shumin Zhai, *IBM,* USA

Describes a novel method of command entry for pen interfaces. Provides three user studies, that among other things, show benefit with technique over pull-down menus and that visual preview helps.

PAPER | Shallow-Depth 3D Interaction: Design and Evaluation of One-, Two-, and Three-Touch Techniques

Mark Hancock, Sheelagh Carpendale, *University of Calgary,* Canada
Andy Cockburn, *University of Canterbury,* New Zealand

Presents and compares three new direct-touch shallow-depth 3D interaction techniques for the tabletop display. Can assist in designing effective 3D interactions for tabletop information organizing and sharing.

PAPER | Affordances for Manipulation of Physical vs. Digital Media on Interactive Surfaces

Lucia Terrenghi, *Ludwig Maximilian University of Munich,* Germany
David Kirk, *University of Nottingham,* UK
Abigail Sellen, Shahram Izadi, *Microsoft,* UK

We inform interface design for surface computing by discussing the results of a comparative study which elicits the different affordances for manipulation of physical versus digital media on interactive surfaces.

PAPERS | ROOM: A2

PEOPLE, LOOKING AT PEOPLE

SESSION CHAIR: Catalina Danis, *IBM*, USA

PAPER | Effects of Presenting Geographic Context on Tracking Activity between Cameras

Andreas Girgensohn, *FX Palo Alto Laboratory,* USA
Frank Shipman, *Texas A&M University,* USA
Thea Turner, Lynn Wilcox, *FX Palo Alto Laboratory,* USA

Presents designs for providing geographic cues to aid cross-camera activity tracking and compares user performance and preferences. Shows implications for the design of interfaces for video surveillance or multi-video applications.

PAPER | Dynamic Shared Visual Spaces: Experimenting with Automatic Camera Control in a Remote Repair Task

Abhishek Ranjan, Jeremy P. Birnholtz, Ravin Balakrishnan, *University of Toronto,* Canada

Presents evaluation of automatic camera control in a remote helper task. Results used to guide designs of automatic camera control systems.

NOTE | "Look!" – Using the Gaze Direction of Embodied Agents

Johann Schrammel, Arjan Geven, Reinhard Sefelin, *Center for Usability Research & Engineering,* Austria
Manfred Tscheligi, *University of Salzburg,* Austria

Experiments investigating whether users can detect an agent's line of sight and whether the agent's gaze patterns support users in performing different tasks. Can assist in developing embodied agents.

NOTE | Museum Guide Robot Based on Sociological Interaction Analysis

Yoshinori Kuno, Kazuhisa Sadazuka, Michie Kawashima, Keiichi Yamazaki, *Saitama University,* Japan
Akiko Yamazaki, *Future University, Hakodate,* Japan
Hideaki Kuzuoka, *University of Tsukuba,* Japan

Describes a museum guide robot that turns its head while explaining an exhibit. Shows when to turn the robot's head for improving the engagement between the human and the robot.

■ PAPERS | ROOM: A3

INPUT TECHNIQUES

SESSION CHAIR: Gonzalo Ramos, *University of Toronto,* Canada

PAPER | Bubbling Menus: A Selective Mechanism for Accessing Hierarchical Drop-Down Menus

Theophanis Tsandilas, *University of Toronto,* Canada
m c schraefel, *University of Southampton,* UK

Introduces a new technique for accelerating selection in customized views of hierarchical pull-down menus. The new technique is evaluated by two user studies.

PAPER | Command Line or Pretty Lines? Comparing Textual and Visual Interfaces for Intrusion Detection

Ramona S. Thompson, Esa Rantanen, *University of Illinois, Urbana-Champaign,* USA
William Yurcik, *National Center for Supercomputing Applications,* USA
Brian P. Bailey, *University of Illinois, Urbana-Champaign,* USA

Conducted a comparative user study of textual and visual interfaces for intrusion detection. Provides insight about strengths and weaknesses of interfaces and guidelines for the design of future interfaces.

PAPER | Pointing and Beyond: An Operationalization and Preliminary Evaluation of Multi-Scale Searching

Emmanuel Pietriga, Caroline Appert, Michel Beaudouin-Lafon, *INRIA & Université Paris-Sud & CNRS INRIA,* France

Defines an operationalization of a multi-scale search task. Evaluates four multi-scale navigation techniques on this task and reports results showing that overview+detail outperforms the other techniques.

■ PAPERS | ROOM: A4 & A5

LOCATION AWARE SYSTEMS

SESSION CHAIR: Dianne Murray, *City University,* UK

PAPER | Social Practices in Location-Based Collecting

Kenton O'Hara, Timothy Kindberg, *Hewlett-Packard,* USA
Maxine Glancy, Luciana Baptista, Byju Sukumaran, Gil Kahana, Julie Rowbotham, *BBC,* UK

The paper presents a user study of a location-based application at London Zoo focusing on collecting and keeping of location-based content in contrast simple in situ consumption of content.

PAPER | Capturing, Sharing, and Using Local Place Information

Pamela J. Ludford, Reid Priedhorsky, Ken Reily, Loren Terveen, *University of Minnesota,* USA

Two user studies uncover the benefits of shared local place information applications. We also detail privacy preferences in this domain and show how they can be used to positively inform related system design.

NOTE | Show Me the Way to Monte-Carlo: Density-Based Trajectory Navigation

Steven Strachan, *Hamilton Institute,* Ireland
John Williamson, Roderick Murray-Smith, *University of Glasgow,* UK

Describes a handheld system for actively exploring context densities using inertial sensing, GPS, Monte Carlo sampling, and music feedback, enabling eyes-free navigation along trajectories unfamiliar to the user.

NOTE | MapMover: A Case Study of Design-Oriented Research into Collective Expression and Constructed Publics

Carl DiSalvo, Jeff Maki, *Carnegie Mellon University,* USA
Nathan Martin, *DeepLocal, Inc,* USA

Describes design-oriented research of an interactive system for collective expression and introduces the concept of constructed publics. This concept can be used to inform design and for analysis in research.

■ EXPERIENCE REPORTS | ROOM: A8

ETHNOGRAPHY

SESSION CHAIR: Steven R. Haynes, *The Pennsylvania State University,* USA

How Informances Can Be Used in Design Ethnography

Ron Wakkary, Poon Madison, Maestri Leah, Kirton Travis, Julihn Corey, Betts Ryan, *Simon Fraser University,* Canada

In this paper we discuss how we've adapted the technique of informance design for use in design ethnography. We detail our design ethnography workflow method and describe our informances.

Surrogate Users — A Pragmatic Approach to Defining User Needs

Matthew A. Lievesley, Joyce S. R. Yee, *Northumbria University,* UK

It is often difficult for practising interaction designers to engage with real end-users because of the competing economic pressures on projects. Preliminary research with end-users may be squeezed in favor of more tangible, later-stage project deliverables. This case-study paper presents a pragmatic approach to getting closer to end-users by briefing project stakeholders to think as surrogate-users within managed 90 to 120 minute-long focus groups. It finds that the method described is particularly useful in multi-stakeholder projects and provides a rich design brief with clear, agreed, user-centred design goals.

In-Between Theory and Practice: Dialogues in Design Research

Arianna Bassoli, *The London School of Economics and Political Science,* UK
Johanna Brewer, *University of California, Irvine,* USA
Karen Martin, *University College London,* UK

Why Wait? and Betwixt are two of the workshops we have recently run on the theme of in-between-ness. The approach of social computing, where researchers with different background collaborate to understand how the socio-cultural aspects of human life relate to the design of new technologies, was the starting point for our investigation. By observing actual instances of in-between-ness in context we explored how design activities can be interpreted as an opportunity to discuss and take positions on a specific theme, and as a space for resolving the tension existing in design research between theoretical and practical thinking.

■ PAPERS | ROOM: B1-B4

SOCIAL NETWORK SHARING

SESSION CHAIR: Danyel Fisher, *Microsoft,* USA

PAPER | Follow the Reader: Filtering Comments on Slashdot

Cliff Lampe, Erik Johnston, *Michigan State University,* USA
Paul Resnick, *University of Michigan,* USA

We show that automated methods for filtering large-scale, online discussions can be derived from the behavior of other users, especially of those who are more likely to change settings.

PAPER | Exploring Patterns of Social Commonality Among File Directories at Work

John C. Tang, Clemens Drews, Mark Smith, *IBM,* USA
Fei Wu, *University of Washington,* USA
Alison Sue, Tessa Lau, *IBM,* USA

Examining how users within work organizations store files yields patterns of social practice that can be applied in applications for file backup and restore and social networking.

PAPER | CoMedia: Mobile Group Media for Active Spectatorship

Giulio Jacucci, Antti Oulasvirta, Tommi Ilmonen, John Evans, Antti Salovaara, *Helsinki Institute for Information Technology,* Finland

Presents a design for large-scale events that integrates awareness features and event information to a media-sharing application. Support spectators to interweave their changing activities inside and outside the system.

■ COMPETITION | ROOM: C2

STUDENT RESEARCH COMPETITION

SESSION CHAIRS:
Kori M. Inkpen, *Dalhousie University,* Canada
Robert C. Miller, *MIT,* USA

JUDGES:
Robert St. Amant, *North Carolina State University,* USA
Michael J. Muller, *IBM,* USA
Takeo Igarashi, *University of Tokyo,* Japan
Terry Winograd, *Stanford University,* USA
Elizabeth F. Churchill, *Yahoo!,* USA
Andrew Monk, *University of York,* UK
Fabio Paterno, *ISTI-CNR,* Italy
Geraldine Fitzpatrick, *University of Sussex,* UK
Carl Gutwin, *University of Saskatchewan,* Canada
Robin Jeffries, *Google,* USA

This is the final round of the CHI 2007 Student Research Competition, in which the student finalists give short talks about their research to CHI attendees. A panel of expert judges will evaluate and score both the research and the presentation, and select the winning entries.

■ SPECIAL INTEREST GROUP | C4

DESIGN COMMUNITY SIG

MODERATORS:
Jon Kolko, *Savannah College of Art and Design,* USA
Bill Lucas, *MAYA Design,* USA
Elizabeth Dykstra-Erickson, *ACCESS Systems America,* USA
Sebastiano Bagnara, *University of Sassari, Alghero,* Italy

This SIG will be a forum for reflection, discussion and planning. The 2007 Design Community Co-Chairs will talk about their goals, successes and shortcomings. Subsequently, attendees will be encouraged to deliberate matters of Design within academia and industry; thereby helping to strategize optimal integration at CHI 2008 and beyond.

COURSE 28 | ROOM: A6

AJAX – DESIGN AND USABILITY

9:00–13:00

INSTRUCTOR:
William Hudson, *Syntagm Ltd.,* UK

Benefits: This half-day interactive course breaks new ground in relating Ajax technology to key principals of Computer-Human Interaction.

Intended Audience: Web and intranet designers, information architects, usability, and HCI professionals. No specialist skills or knowledge are required.

COURSE 32 | ROOM: A6

AVOIDING "WE CAN'T CHANGE THAT!": AN INTRODUCTION TO USABILITY AND SOFTWARE ARCHITECTURE

14:30–16:00

INSTRUCTORS:
Bonnie E. John, *Carnegie Mellon University,* USA
Len Bass, *Carnegie Mellon University,* USA
Elspeth Golden, *Carnegie Mellon University,* USA

Benefits: The usability analyses or user test data are in; the development team is poised to respond. The software had been carefully modularized so that modifications to the UI can be fast and easy. When the usability problems are presented, someone around the table exclaims, "Oh, no, we can't change THAT!" This course will introduce software architecture and the interactions between architecture design decisions and usability requirements that cause "We can't change that!" at detailed design meetings. We introduce a method for solving this problem at architecture design time. (An advanced course, We can't change THAT, either!: Usability-Supporting Architectural Patterns, gives details of an approach to solve this problem).

Intended Audience: Usability professionals desiring more involvement with early software decisions.

Software developers who want to understand the usability implications of architectural decisions. No prior knowledge of software architecture is needed.

COURSE 33 | ROOM: A6

AVOIDING "WE CAN'T CHANGE THAT EITHER!": USABILITY SUPPORTING ARCHITECTURAL PATTERNS

16:30–18:00

INSTRUCTOR:
Bonnie E. John, *Carnegie Mellon University,* USA
Len Bass, *Carnegie Mellon University,* USA
Elspeth Golden, *Carnegie Mellon University,* USA

Benefits: Additional usability analyses or user test data are in; the development team is poised to respond. The software had been carefully modularized so that modifications to the UI can be fast and easy. When the usability problems are presented, someone around the table exclaims, "Oh, no, we can't change THAT, either!" This course builds on an understanding of software architecture and details a method for avoiding "We can't change THAT!" through the application of usability-supporting architectural patterns. Through detailed examples, controlled experiments to validate the value of the method, and personal experience with the construction of real-world systems, we present attendees with the materials necessary to be effective at bringing usability concerns to architecture design discussions. (An introductory course, Avoiding "We can't change THAT!": An Introduction to Usability and Software Architecture" prepares attendees with no prior experience in software architecture to benefit from this course). Participants in this course already understand basic principles of software architecture for interactive systems.

Through this course will, they will:

- Understand patterns of software architecture that facilitate usability,
- Be able to recognize architectural decisions that preclude usability of the end product so that they can effectively bring usability considerations into early architectural design.

Intended Audience: Usability professionals desiring more involvement with early software decisions. Software developers who want to understand the usability implications of architectural decisions. Prior knowledge of software architecture is required. This knowledge can be obtained by attending the introductory course, Avoiding "We can't change THAT!": An Introduction to Usability and Software Architecture.

COURSE 26 | ROOM: A7

FACETED METADATA FOR INFORMATION ARCHITECTURE AND SEARCH

9:00–13:00

INSTRUCTORS:
Marti A. Hearst, *University of California, Berkeley,* USA
Preston Smalley, *eBay,* USA

Benefits: The information architecture community has begun to embrace the use of faceted hierarchical metadata for navigation and search over information collections (museum images, product catalogs, digital libraries). Attendees will learn the advantages of and strategies for using faceted metadata for integrated browsing and search of large information collections. Examples will be drawn both from formal studies and from results of real-world application, with an emphasis on interface design issues.

Intended Audience: The intended audience is usability professionals, especially information architects, but will be of interest to search interface researchers as well.

COURSE 27 | ROOM: A7

EMPIRICAL RESEARCH METHODS FOR HUMAN COMPUTER INTERACTION

14:30–18:00

INSTRUCTOR:
Scott MacKenzie, *York University,* Canada

Benefits: This course will empower attendees to undertake a program of empirical research on a topic in HCI relevant to their interests. After attending this tutorial, attendees will have the specific skills necessary for the following: (1) discover and narrow in on topics suitable for research in HCI, (2) formulate "testable" research questions, (3) design and conduct an experiment to answer the research questions, (4) collect and analyze empirical data from an experiment, and (5) write a research paper based on the experiment.

Intended Audience: This course is intended for those who are interested in learning about or refining their skills in empirical research methods in human-computer interaction (HCI). Prior knowledge of statistical tests is not required.

COURSE 31 | ROOM: C3

EXPERT REVIEWS – FOR EXPERTS

9:00–13:00

INSTRUCTOR:
Rolf Molich, *DialogDesign,* Denmark

Benefits: Expert reviews, such as heuristic evaluations and other design inspections, are the second most widely used usability method. Nonetheless, they're often conducted with poor or unsystematic methodology and thus don't always live up to their full potential. This course teaches proven methods for conducting and reporting expert reviews of a user interface design.

Intended Audience: Usability professionals who have usability testing experience and who have conducted some expert reviews. Although this course is not intended as an introduction to expert reviews, past participants with no expert review experience have rated it highly.

COURSE 29 | ROOM: C3

HOW TO BUILD RICH PERSONAS FROM FIELD DATA

14:30–16:00

INSTRUCTOR:
Karen Holtzblatt, *InContext Enterprises,* USA

Benefits: Personas have understandably become very popular in the CHI community. When done properly personas provide a powerful tool that communicates our understanding of the users to the developers and other stakeholders who must build products, systems, marketing messages, and otherwise respond to the needs of their users. This course covers what makes for an effective persona, and then provides step-by-step guidance on how to better leverage in-depth field data to write personas. It explains why personas are a valuable communication tool and raises the issue that for personas to be truly useful, they must be derived from field data. This course will both raise the issue for participants and give them a starting skill set they can use to improve their personas going forward.

Intended Audience: No specific background is required. Although the course focuses on CD models, previous experience with them is not required. It is appropriate for all roles.

COURSE 30 | ROOM: C3

USABILITY TESTING: CREATING GOOD TEST TASKS

16:30–18:00

INSTRUCTOR:
Rolf Molich, *DialogDesign,* Denmark

Benefits: The success of a usability test depends critically on the quality of the tasks used in the test. This course will present specific guidelines for creating good task sets and for evaluating the quality of a task set. It will also present common pitfalls in task sets and how to avoid them. A large part of the course is spent evaluating a sample, non-trivial task set that contains typical problems.

Intended Audience: Beginners and intermediate usability professionals who want to improve their usability test task creation skills based on extensive practical experience.

COURSE 23 | ALMADEN BALLROOM I

ANALYZING QUALITATIVE DATA FROM FIELD STUDIES

9:00–18:00

INSTRUCTOR:
David A. Siegel, *Dray & Associates, Inc.,* USA

Benefits: Field studies are essential to user-centered design, but the data from these studies can be overwhelming and ambiguous. As a result, conclusions are all too often impressionistic or anecdotal, with vague or even misleading implications for design. This course will teach you techniques for analysis to improve the credibility and validity of your findings, to keep them focused on design, and to help you avoid drowning in your data. However, the course does not focus on techniques of data gathering in fieldwork, and assumes that people have a basic knowledge of these techniques.

Intended Audience: This tutorial is intended for practitioners who want to improve the validity and credibility of their field user research. Ideally, participants will have some experience in fieldwork including ethnography, contextual inquiry, or naturalistic usability, with a practical focus on any aspect of product definition and design. However, it also will be of interest to people who have a background in more structured forms of user research, such as lab usability, who want to prepare for the less structured world of field research.

COURSE 24 | ALMADEN BALLROOM II

UNDERSTANDING MOBILE INTERACTION DESIGN

9:00–13:00

INSTRUCTOR:
Matt Jones, *University of Wales,* UK

Benefits: The course will give challenging, fresh perspectives on the goals of and approaches to mobile interaction design provide provoking questions about the form and function of effective mobile user experiences, and offer an interesting analysis to help explain previous hits and flops as well as pointing the way for successful future innovation. The design methods and perspectives presented will provide useful tools for anyone involved in developing concept and prototype systems.

Intended Audience: Developers and designers, industrial and academic researchers, students, mobile business and marketing analysts and strategists.

COURSE 25 | ALMADEN BALLROOM II

DOING MOBILE INTERACTION DESIGN

14:30–18:00

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

Benefits: Participants will be exposed to tried-and-tested design solutions for key and emerging mobile applications and services. The course will present a set of research pointers. Those working on the topics of information access, image access and mobile communities will be given insights into the current and evolving thinking surrounding these application areas. The course will also provide insights and inspirations from the research community useful to all attendees.

Intended Audience: Developers and designers, industrial and academic researchers, students, mobile business and marketing analysts and strategists.