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**Courses**
- Course 21: Web Usability for Assistive Technology
- Course 22: Rapid Prototyping & Evaluation with Web Mashups
- Course 19: Information Foraging Theory
- Course 17: An Introduction to Designing for the Scent of Information
- Course 16: Design of Spatial Applications
- Course 20: Building Affinity Diagrams to Reveal User Needs & Engage Developers
- Course 15: Understanding Users in Context: An In-Depth Introduction to Fieldwork
- Course 14: Card Sorting & Cluster Analysis for Information Architecture Design
- Course 18: Capturing Longitudinal Usability

**Commons**
- Exhibits, Interactivity, & Info Booth
- Job Fair

**SPECIAL EVENTS**
- Spotlight on Work-in-Progress Posters
- Job Fair

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= 15 minutes  = 30 minutes  = unscheduled time
AWARD TALK | CIVIC AUDITORIUM

SOCIAL IMPACT AWARD: GARY MARSDEN
SESSION CHAIR: Ben Shneiderman, University of Maryland, USA

Doing HCI Differently – Stories from the Developing World

Gary Marsden, University of Cape Town, South Africa

Using case studies and examples, this talk looks at the challenges of applying standard HCI techniques in a developing world context. We look at how HCI can have a fantastic impact on communities in the developing world, but there is still some way to go in understanding how HCI can best benefit the developing world.

CHI MADNESS | CIVIC AUDITORIUM

SESSION CHAIRS:
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 days program.
INTERACTIVE SESSION | CIVIC AUDITORIUM

“GET REAL!” WHAT’S WRONG WITH HCI PROTOTYPING AND HOW CAN WE FIX IT?

MODERATOR:
William Jones, University of Washington, USA

PANELISTS:
Michael Arent, SAP, USA
Victoria Bellotti, PARC, USA
Mary Czerwinski, Jonathan Grudin, Microsoft, USA
Tom Rodden, University of Nottingham, UK
Jared M. Spool, User Interface Engineering, USA

A prototype – as a means to evaluate and communicate a good idea – is often an essential step towards useful, shipping products and also towards a deeper understanding of what people really need. Prototyping and user evaluation can be enormously expensive and failure rates are high. Moreover, prototype user evaluations are often far from real with respect to user representatives, tasks, and measures. But to “get real” in HCI prototyping and evaluations risks placing even greater (more unrealistic) demands upon the HCI researcher. Do very real costs and constraints force HCI prototyping to the margins? Can we change acceptable HCI prototyping methods, helping HCI prototyping “get real”, in both its conduct and the implications of its results?

SPECIAL INTEREST GROUP | ROOM: A1

SUSTAINABILITY AND INTERACTION

MODERATORS:
Jennifer Mankoff, Susan R. Fussell, Carnegie Mellon University, USA
Paul Resnick, University of Michigan, USA
Baty Friedman, University of Washington, USA
Phoebe Sengers, Cornell University, USA
Alan Borning, University of Washington, USA
Eli Blevis, Indiana University, USA
Jay Hasbrouck, Allison Woodruff, Intel, USA

The goal of this SIG is to raise awareness of these issues in the CHI community and to start a conversation about the possibilities and responsibilities we have to address issues of sustainability.

PAPERS | ROOM: A2

GAZE & EYE TRACKING

SESSION CHAIR: Chris North, Virginia Polytechnic Institute and State University, USA

PAPER | What Are You Looking For? An Eye-Tracking Study of Information Usage in Web Search
Edward Cutrell, Microsoft, USA
Zhiwei Guan, Microsoft & University of Washington, USA

This paper describes a Web search study using eye-tracking methodologies. The study shows that increasing the amount of contextual information in search results improves performance for informational tasks, but hurts performance on navigational tasks.

NOTE | An Eye Tracking Study on How People Search When the Target is Not Shown on Top of the List
Zhiwei Guan, University of Washington, Seattle, USA
Edward Cutrell, Microsoft, USA

An empirical study showing inefficiency of ordered result display for people’s search when the best result isn’t shown on top. Provide evidence invoking future redesign of search result interface.

NOTE | A Minimal Model for Predicting Visual Search
Tim Halverson, Anthony J. Hornof, University of Oregon, USA

This research extends a rich lineage of computational models designed specifically with HCI tasks in mind. A minimal visual search model is presented that will benefit automated interface analysis tools.

PAPER | EyePoint: Practical Pointing and Selection Using Gaze and Keyboard
Manu Kumar, Andreas Paepcke, Terry Winograd, Stanford University, USA

We present the first practical and universally-applicable (for disabled and able-bodied users) solution for gaze-based pointing and selection for everyday computing tasks. Users preferred EyePoint over pointing with a mouse.
ONLINE REPRESENTATION OF SELF
SESSION CHAIR: A. J. Bernheim Brush, Microsoft, USA

PAPER | A Familiar Face(book): Profile Elements as Signals in an Online Social Network
Cliff Lampe, Nicole Ellison, Charles Steinfield, Michigan State University, USA

This study shows that different elements in a user profile have different effects on participation outcomes. Profile fields that enable common points of reference are associated with more “friend” links.

NOTE | Constructing My Online Self: Avatars that Increase Self-Focused Attention
Asimina Vasalou, Imperial College London, UK
Adam Joinson, Open University, UK
Jeremy Pitt, Imperial College London, UK

We show that the individuating properties emitted by online avatars to their owners can increase self-focused attention. In computer-mediated communication, self-focused attention has the ability to effect online behavior.

NOTE | The Truth about Lying in Online Dating Profiles
Jeffrey T. Hancock, Catalina Toma, Cornell University, USA
Nicole Ellison, Michigan State University, USA

By cross-validating profile information with observed personal characteristics, this study is the first to gauge actual practices of deception in online dating profiles, revealing deceptions to be frequent but small.

PAPER | He Says, She Says: Conflict and Coordination in Wikipedia
Aniket Kittur, University of California, Los Angeles, USA
Bongwon Suh, Bryan A. Pendleton, Ed H. Chi, PARC, USA

Characterizes growing conflict and interference costs in Wikipedia and presents machine learning and visualization tools to support continued growth. Can assist designers in developing and improving collaborative knowledge systems.

INNOVATIVE INTERACTIONS
SESSION CHAIR: Kellogg S. Booth, University of British Columbia, Canada

PAPER | Modeling Pointing at Targets of Arbitrary Shapes
Tovi Grossman, Nicholas Kong, Ravin Balakrishnan, University of Toronto, Canada

Empirically investigates user ability to point at graphical targets of arbitrary shapes. Contributes empirical data and a validated model which was shown to accurately predict movement times for the task.

PAPER | Perception of Elementary Graphical Elements in Tabletop and Multi-Surface Environments
Daniel Wigdor, Mitsubishi Electric Research Labs & University of Toronto, USA & Canada
Chia Shen, Clifton Forlines, Mitsubishi Electric Research Labs, USA
Ravin Balakrishnan, University of Toronto, Canada

Empirically investigates user ability to accurately perceive information graphics under perspective distortion inherent in tabletop and multi-surface environments. Contributes empirical data, design guidelines, and recommendations for visualization design.

PAPER | Exploring and Reducing the Effects of Orientation on Text Readability in Volumetric Displays
Tovi Grossman, Daniel Wigdor, Ravin Balakrishnan, University of Toronto, Canada

Empirically investigates user ability to read text in a 3D volumetric display from different viewing angles. Contributes empirical data and evaluated design solutions for improving the text readability.

USABILITY
SESSION CHAIR: Bonnie E. John, Carnegie Mellon University, USA

Coming to Terms: Comparing and Combining the Results of Multiple Evaluators Performing Heuristic Evaluation
Hanna Yehuda, EMC Corp., USA
Jennifer McGinn, Sun Microsystems, Inc., USA

We describe a new way to perform heuristic evaluations which allows multiple evaluators to easily compare and combine the results of their reviews. This method was developed to provide a single, reliable, result to the client, but it also allowed us to easily negotiate differences in our findings and to prioritize usability problems. An unexpected side effect of this evaluation method is the measure and predictability of the effect of usability improvements.
When Two Methods Are Better Than One: Combining User Study with Cognitive Modeling
Andrea Knight, Google, USA
Guy Pyrzak, Collin Green, SJSU Foundation & NASA, USA

We discuss the benefits of combining user studies and cognitive modeling in the context of Firefox tabbed browsing. We studied new users’ ability to use tabbed browsing without assistance, and then evaluated alternatives. In general, our experience highlights the advantages of using user studies and modeling together to do user interface evaluation.

Persona Based Rapid Usability Kick-Off
Nina Khalayli, Telenor Research & Innovation, Norway
Tone Terum, Telenor Nordic Mobile, Norway
Silja Nyhus, Kari Hamnes, Telenor Research & Innovation, Norway

The paper reports on the evaluation of a rapid usability kick-off technique (RUKO), designed for non-usability experts (NUEs), to enable them to perform usability work. The effect was that usability awareness and end user focus in projects increased. However, so did the need for usability expertise in latter phases.

Usability On Patrol
Maria Callander, Carlsbad Police Department, USA
Lorna Zorman, California State University, San Marcos, USA

The introduction of computers into police patrol cars comes with an increase in driver distraction issues. We will describe the usability process and techniques we adapted to study computers in law enforcement patrol cars based on a combination of a National Highway Traffic Safety Administration (NHTSA) workload assessment protocol and cognitive modeling. Using cognitive modeling, we could identify the potential problems for certain tasks, such as running a license plate with typical mouse-keyboard interface compared with doing the same task via radio contact with dispatcher.

PAPER | Aligning Development Tools with the Way Programmers Think About Code Changes
Marat Boshernitsan, Agitar Software, Inc, USA
Susan L. Graham, Marti A. Hearst, University of California, Berkeley, USA

We present a novel visual language and interaction model for performing structural transformations in source code. The language matches programmer intuitions and performs well on objective and subjective usability measures.

PAPER | Task and Social Visualization in Software Development: Evaluation of a Prototype
Jason B. Ellis, IBM, USA
Shahtab Wahid, Virginia Polytechnic Institute and State University, USA
Catalina Danis, Wendy A. Kellogg, IBM, USA

An empirical evaluation of an interactive visualization tool supporting distributed development based on interviews and a comparison of tasks carried out in the tool vs. a traditional bug tracking system.

PAPER | Let’s Go to the Whiteboard: How and Why Software Developers Use Drawings
Mauro Cherubini, Swiss Federal Institute of Technology, Switzerland
Gina Venolia, Rob DeLine, Microsoft, USA
Andrew J. Ko, Carnegie Mellon University, USA

How and why developers draw code? Informal notation was often used to support face-to-face communication, so standards don’t help. Software engineering differs from other engineering disciplines, which can affect tool design.

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REXplorer: A Mobile, Pervasive Spell-Casting Game for Tourists
Rafael Ballagas, RWTH Aachen University, Germany
Steffen Walz, ETH Zurich, Germany
Sven Kratz, RWTH Aachen University, Germany
Claudia Fuhr, ETH Zurich, Germany
Eugen Yu, RWTH Aachen University, Germany
Martin Tann, ETH Zurich, Germany
Jan Borchers, RWTH Aachen University, Germany
Ludger Hovestadt, ETH Zurich, Germany

REXplorer is a mobile, pervasive spell-casting game designed for tourists of Regensburg, Germany. Uses location sensing to create player encounters with spirits (historical figures) that are associated with historical buildings in an urban setting and a novel mobile interaction mechanism of “casting a spell” (making a gesture by waving a mobile phone through the air) allows the player to awaken and communicate with a spirit to continue playing the game. The game is designed to make learning history fun for young (and young at heart) tourists and influence their path through the city.

NOTE | Jogging the Distance
Shannon O’Brien, Commonwealth Scientific Industrial Research Organisation, Australia
Florian ‘Floyd’ Mueller, Georgia Institute of Technology, USA

“Jogging over a Distance” allows joggers to socialize and motivate each other while jogging in geographically distant locations through the use of spatially distributed audio. We hope our approach encourages active and future joggers to jog more often, while simultaneously supporting their social friendships.

Jogging Over a Distance
Florian ‘Floyd’ Mueller, Georgia Institute of Technology, USA
Shannon O’Brien, Alex Thorogood, CSIRO & Connecting People Group \ ICT Centre, Australia

Jogging is a healthy activity and many people enjoy jogging with others for social and motivational reasons. However, it was found through surveying, that jogging partners might not always live in the same location and it may be difficult to find a local jogger who runs at the same pace. “Jogging over a Distance” allows joggers to socialize and motivate each other while jogging in geographically distant locations through the use of spatially distributed audio.

BodySpace: Inferring Body Pose for Natural Control of a Music Player
Steven Strachan, Hamilton Institute, UK
Roderick Murray-Smith, University of Glasgow & Hamilton Institute, UK
Sile O’Modhrain, Queens University, UK

We describe the BodySpace system, which uses inertial sensing and pattern recognition to allow the gestural control of a music player by placing the device at different parts of the body. We demonstrate a new approach to the segmentation and recognition of gestures for this kind of application and show how simulated physical model-based techniques can shape gestural interaction.

BEYOND USABILITY FOR SAFETY CRITICAL SYSTEMS

MODERATORS:
Philippe Palanque, Sandra Basnyat, University Toulouse, France
Regina Bernhaupt, Universität Salzburg, Austria
Ronald Boring, Idaho National Laboratory, USA
Chris Johnson, University of Glasgow, UK
Peter Johnson, University of Bath, UK

The aim of this SIG is to provide a forum for both researchers and practitioners interested in safety critical interactive systems. Our goal is to define a roadmap of activities to cross fertilize usability, reliability and safety for these kinds of systems to minimize duplicate efforts and reuse knowledge in all the communities involved.
MOVING UX INTO A POSITION OF CORPORATE INFLUENCE: WHOSE ADVICE REALLY WORKS?

MODERATOR:
Richard Anderson, Rlander, USA

PANELISTS:
Jeremy Ashley, Oracle, USA
Tobias Herrmann, mobilkom austria, Austria
Justin Miller, eBay, Switzerland
James Nieters, Cisco Systems, USA
Shauna Sampson Eves, Blue Shield of California, USA
Secil Watson, Wells Fargo, USA

Professionals working to move user experience (UX) into a position of corporate influence are impeded by conflicting recommendations, including those regarding the roles of documenting and evangelizing UX work, ownership of UX, organizational positioning, calculating return on investment, and conducting “ethnographic” research. In this interactive session, a group of senior UX management personnel who have moved UX into positions of rapidly increasing influence in their varied places of work debate.

EDUCATION & CULTURE

SESSION CHAIR: Charles van der Mast, Delft University of Technology, the Netherlands

Mandala: Supporting Social Presence and Interaction in the Chinese Home
Neema Moraveji, Microsoft, China
A.R.D. Rajan, National Institute of Design, India
Liu Like, Sichuan University, China

Multiple factors lead social software to be unevenly adopted by differing age segments in urban China. This paper presents user research to understand the discrepancy between parents and their children and attempts to address them with the design of an information appliance. The appliance attempts to support interaction ranging from peripheral awareness to real-time conversation.

A Theory-Based Approach to Designing Student Learning Context
Jarinee J. Chattratchart, Kingston University London, USA

This paper describes how educational research findings were deployed to address the issues of engaging students of different levels of technical ability across four semesters in an HCI module at a UK university. Kolbís experiential learning cycle was successfully applied to the design and scheduling of course content and learning activities to enhance students’ learning outcomes.

Education, Entertainment, and Authenticity: Lessons Learned from Designing an Interactive Exhibit about Medieval Music
Marius Wolf, Eric Lee, Jan Borchers, RWTH Aachen, Germany

We describe the design experience gathered from creating an interactive exhibit about medieval music. We focused our work on three major goals: educational value, entertainment aspects, and historic authenticity. We present insight into the challenges in designing a system with these goals and how they could be solved.

Establishing Relationships For Designing Rural Information Systems
Yael Schwartzman, Tapan S. Parikh, University of Washington, USA

Designing for the developing world presents unique challenges. Establishing rapport with local partners is important to overcome contextual unfamiliarity and ensure the relevance of proposed solutions. We discuss our experiences designing CAM is a camera-based mobile application framework design and how we used a system based on this design to do data capture for Asobagri, a rural coffee cooperative in Barillas, Guatemala.

A Bridging Design Prototype for Investigating Concept Mapping in the Preschool Community
Gloria Gomez, Swinburne University of Technology, Australia

We report on pilot studies where teachers from two different preschools incorporated a bridging design prototype (BDP) for concept mapping into classroom activities. Designed under inclusive, participatory, user-centered principles, the BDP was used to perform observations assessing an interaction problem and in familiarizing the researcher with the user community. Results showed voice-input devices promote illiterate children’s authoring and self-regulation skills when adding meaning to symbols.

TANGIBILITY

SESSION CHAIR: Chia Shen, Mitsubishi Electric Research Labs, USA

NOTE | Senspectra: A Computationally Augmented Physical Modeling Toolkit for Sensing and Visualization of Structural Strain
Vincent LeClerc, Amanda Parkes, Hiroshi Ishii, MIT, USA

Senspectra is a computationally augmented physical modeling toolkit for sensing and visualization of structural strain, incorporating the material quality of malleable elements of an interface into its digital control structure.
**NOTE | Tangible User Interface for Chemistry Education: Comparative Evaluation and Re-Design**

Morten Fjeld, Jonas Fredriksson, Martin Ejdestig, Florin Duca, Chalmers TH, Sweden
Kristina Bötschi, University of Zurich, Switzerland
Benedikt Voegtl, Patrick Juchli, HyperWerk, FHBB, Switzerland

Augmented Chemistry (AC) is a tangible application to learn organic chemistry. The evaluation presented compared learning effectiveness and user acceptance of AC versus ball-and-stick model. The AC system was then re-designed, which gave improved subjective opinions on use.

**PAPER | Mechanical Constraints as Computational Constraints in Tabletop Tangible Interfaces**

James Patten, Hiroshi Ishii, MIT, USA

Describes a new tabletop tangible interface and series of interaction techniques that use mechanical constraints to aid problem solving. This may expand the roles readers consider for tangibles in UIs.

**PAPER | Computational Composite**

Anna Vallgårda, IT University of Copenhagen, Denmark
Johan Redström, Danish Royal Academy of Fine Arts, Denmark

Presents a theoretical contribution on how to understand computers as a design material. People involved with technology development for interaction design and designers can benefit from the proposed perspective.

**WEB USABILITY**

SESSION CHAIR: Ed H. Chi, PARC, USA

**PAPER | Presenting Web Image Search Results in Semantic Clusters**

Shuo Wang, Feng Jing, Microsoft, China
Jibo He, Peking University, China
Qixing Du, Tsinghua University, China
Lei Zhang, Microsoft, China

The paper addresses an evaluative exploration of interface using image clustering for web image searches. Users prefer this organized result UI over traditional list views.

**PAPER | Web Page Revisitation Revisited: Implications of a Long-Term, Click-Stream Study of Browser Usage**

Hartmut Obendorf, Harald Weinreich, University of Hamburg, Germany
Eelco Herder, University of Hannover, Germany
Matthias Mayer, University of Hamburg, Germany

Updates findings concerning revisitation behavior based on an extensive long-term click-stream study of Web usage. Differentiates types of revisits and suggests implications for support by Web designers and Web browsers.

**PAPER | Noticing Notice: A Large Scale Experiment on the Timing of Software License Agreements**

Nathaniel S. Good, Jens Grossklags, Deirdre K. Mulligan, University of California, Berkeley, USA
Joseph A. Konstan, University of Minnesota, USA

A large scale experiment of the timing of software license agreements demonstrating the applicability of HCI techniques to fundamental legal questions regarding notice and consent.
EMPIRICAL MODELS
SESSION CHAIR: Ann Blandford, University College London, UK

PAPER | Meta-Analysis of Correlations Among Usability Measures
Kasper Hornbæk, University of Copenhagen, Denmark
Effie Lai-Chong Law, Eidgenössische Technische Hochschule, Zürich, Switzerland
Investigates how usability measures are correlated and which factors that shapes the correlations. Provides extensive empirical evidence about correlations and uses it to discuss models of usability and usability studies.

PAPER | A Predictive Model of Menu Performance
Andy Cockburn, University of Canterbury, New Zealand
Carl Gutwin, University of Saskatchewan, Canada
Saul Greenberg, University of Calgary, Canada
Presents a model predicting efficiency of menu designs, incorporating components for Fitts' pointing time, visual search time when novice, Hick-Hyman decision time when expert, and for novice to expert transition.

PAPER | Endpoint Prediction Using Motion Kinematics
Edward Lank, University of Waterloo, Canada
Nikko Cheng, San Francisco State University, USA
Jaime Ruiz, University of Waterloo, Canada
Develops a model of endpoint prediction based on kinematic laws of human motion. Enhances our understanding of motion in interfaces and its use in prediction-based interaction techniques.

PAPER | Direct-Touch vs. Mouse Input for Tabletop Displays
Clifton Forlines, Mitsubishi Electric Research Laboratories & University of Toronto, USA & Canada
Chia Shen, Mitsubishi Electric Research Laboratories, USA
Daniel Wigdor, Mitsubishi Electric Research Laboratories & University of Toronto, USA & Canada
Ravin Balakrishnan, University of Toronto, Canada
Presents empirical data investigating differences between direct-touch and mouse input for unimanual and bimanual tasks on tabletop displays. Results can help guide the design of tabletop interfaces.

PAPER | An Alternative to Push, Press, and Tap-Tap-Tap: Gesturing on an Isometric Joystick for Mobile Phone Text Entry
Jacob O. Wobbrock, University of Washington, USA
Duen Horng Chau, Brad A. Myers, Carnegie Mellon University, USA
Presents a novel input strategy involving the use of isometric joysticks on mobile phones. Describes a gestural text entry method competitive with Multitap and T9 but preferred by users.

PAPER | Shift: A Technique for Operating Pen-Based Interfaces Using Touch
Daniel Vogel, University of Toronto, Canada
Patrick Baudisch, Microsoft, USA
Describes a technique for operating pen-based devices using touch by preventing targets from getting occluded by the user’s finger. User study finds performance benefits over existing offset cursor technique.

RE-THINKING HUMANS, COMPUTERS, INTERACTION, AND DESIGN
SESSION CHAIR: Louise Barkhuus, Glasgow University, UK

The Three Paradigms of HCI (30 min)
Steve Harrison, Deborah Tatar, Virginia Polytechnic Institute and State University, USA
Phoebe Sengers, Cornell University, USA
Informal histories of HCI commonly document two major intellectual waves that have formed the field: the first orienting from engineering/human factors with its focus on optimizing man-machine fit and the second stemming from cognitive science, with an increased emphasis on theory and on what is happening not only in the computer but, simultaneously, in the human mind. In this paper, we document underlying forces that constitute a third wave in HCI and suggest systemic consequences for the CHI community.

Questioning the Technological Panacea: Three Reflective Questions for Designers (20 min)
Eric Baumer, Bill Tomlinson, University of California, Irvine, USA
This paper argues that asking whether or not a technological solution is appropriate should be an explicit and exposed part of the design process. It raises three questions that should be addressed during the design process: Are there other, possibly non-technological, solutions that could address the problem equally well, if not better? Are designers creating solutions to problems that users themselves do not need to have? Are these technological solutions treating a problem rather than its cause?
Uptake of Situationism Considered Harmful (20 min)

Lucian Leahu, Claudia Pederson, Jennifer Thom-Santelli, Pavel Dmitriev, Phoebe Sengers, Cornell University, USA

We examine Situationist art practice as an inspiration for HCI design. We argue that methods from Situationist art practice have often been picked up without regard for their underlying sensibility. We describe an experiment in incorporating Situationist sensibility in design and use it to elucidate the challenges that face HCI in truly integrating the arts.

Imagination as Holographic Processor for Text Animation (20 min)

Adim Astakhov, Tamara Astakhova, Brian Sanders, University of California San Diego, USA

Imagination is the critical point in developing realistic artificial intelligence (AI) systems. One way to approach imagination would be simulation of its properties and operations. We developed two models “Brain Network Hierarchy of Languages” and “Semantical Holographic Calculus” and simulation system ScriptWriter that emulate the process of imagination through an automatic animation of English texts.

TRUST 2.1 ADVANCING THE TRUST DEBATE

MODERATORS:
Jens Riegelsberger, Google, UK
Asimina Vasalou, Imperial College London, UK

Our aim is to provide a basis for the discussion of trust research at a this SIG, but also to give researchers and practitioners with an interest in the field an entry point to existing work. More importantly we hope that the SIG and this abstract will help in driving and structuring future trust research.
ALONG THE PATH OF PERVERSIVE COMPUTING: SELECTED WORKS IN GUI AND TUI DESIGN
MODERATOR: Bill Lucas, Maya Design, USA
PANELISTS: Hiroshi Ishii, MIT, USA
Jake Kolojejchick, General Dynamics, USA
Peter Lucas, MAYA Design, USA
David Rose, Ambient Devices, USA

This invited session discusses two bodies of research. Both continuously oriented toward pervasive computing since the early ‘90s. In 1995, MAYA Design introduced the notion of an “information-centric” GUI – where displays are arrangements of elements that can be broken apart by users and directly manipulated, giving people the sense of “getting their hands on the data”. Today, General Dynamics is working with the US Army to deploy collaborative, “infocentric” systems all over the world. Similarly, in 1995, the Tangible Media Group at the MIT Media Lab started to design seamless interfaces between humans, digital information, and the physical environment. Their notion of “Tangible Bits,” giving physical form to digital information, sparked the formation of a company, Ambient Devices, that has sold over 200,000 simple, glanceable information objects and a nationwide bit-tricking network to power them.

PAPER | Understanding and Developing Models for Detecting and Differentiating Breakpoints During Interactive Tasks
Shamsi T. Iqbal, Brian P. Bailey, University of Illinois, Urbana-Champaign, USA

Demonstrates the feasibility of building models that are able to detect and differentiate breakpoints during free-form tasks. These models can enable interruption management systems to realize defer-to-breakpoint policies in practice.

PAPERS | ROOM: A1

PAPERS | ROOM: A2

EMERGENCY ACTION
SESSION CHAIR: John M. Carroll, The Pennsylvania State University, USA

PAPER | Implicit Coordination in Firefighting Practice: Design Implications for Teaching Fire Emergency Responders
Zachary O. Toups, Andruid Kerne, Texas A&M University, USA

Investigates how information flows through teams of fire emergency responders and develops design recommendations for training systems to teach coordination and communication capabilities.

PAPER | Back Stage on the Front Lines: Perspectives and Performance in the Combat Information Center
Paul M. Aoki, Intel, USA

Presents a view of naval command and control as CSCW, focusing on social interaction and self-presentation issues. Provides designers of future systems with considerations beyond task analysis and human factors.

PAPER | Citizen Communications in Crisis: Anticipating a Future of ICT-Supported Public Participation
Leysia Palen, Sophia B. Liu, University of Colorado, Boulder, USA

Information science can help understand, design for, and support an emerging, large-scale arena for computer-mediated interaction: public participation in crisis events.
DESIGN METHODS
SESSION CHAIR: Steve Harrison, Virginia Polytechnic Institute and State University, USA

PAPER | Transfer Scenarios: Grounding Innovation with Marginal Practices
Sara Ljungblad, Viktoria Institute, Sweden
Lars Erik Holmquist, Swedish Institute of Computer Science, Sweden

Transfer scenarios is a method that supports the design of innovative technology. It involves groups that are not the intended users in the design process to encourage a changed mindset.

PAPER | Work-Centered Design of a Mixed-Initiative Scheduler
Keith A. Butler, Microsoft, USA
Chris Esposito, The Boeing Co., USA
Jiajie Zhang, University of Texas, USA
Ron Hebron, Ali Bahrami, The Boeing Co., USA
David Kieras, University of Michigan, USA

A new design method for HCI where the information work requires technical problem-solving; A breakthrough application that integrates aircraft scheduling for missions and maintenance.

EXPERIENCE REPORT | Making Personas Memorable
James Nieters, Subbarao Ivaturi, Iftikhar Ahmed, Cisco, USA

Although Cisco’s tag line for fiscal year 2007 is “Lead the Experience”, not all Cisco product teams have historically focused on designing products that facilitate user success and delight. The Cisco User Experience Design (UXD) Group provides tools that stimulate a UXD culture, one of which is personas to catalyze a common understanding of users and a centralized persona database. The challenge has been that engineers at Cisco could opt out of using personas. In November 2005, the UXD team won an award for developing best practices in product development for creating these personas by vice presidents from across Cisco.

MOBILE INTERACTION TECHNIQUES II
SESSION CHAIR: Shumin Zhai, IBM, USA

PAPER | Pointing Lenses
Gonzalo Ramos, University of Toronto, Canada
Andy Cockburn, University of Canterbury, New Zealand
Ravin Balakrishnan, University of Toronto, Canada
Michel Beaudouin-Lafon, Université Paris-Sud & CNRS, INRIA, France

Presented three Pointing Lenses, which improve stylus-based input. Our studies show that lenses are beneficial for targets smaller than five pixels, and that this benefit may extend to larger targets.

PAPER | Comparing Physical, Automatic, and Manual Map Rotation for Pedestrian Navigation
Will P. J. Seager, University College London, UK
Danae Stanton-Fraser, University of Bath, UK

This paper presents findings concerning the effectiveness of different means of maintaining track-up alignment on map-based mobile navigation assistants. The findings suggest design improvements to facilitate more effective track-up alignment.

PAPER | Intimate Interfaces in Action: Assessing the Usability and Subtlety of EMG-Based Motionless Gestures
Enrico Costanza, Ecole Polytechnique Fédérale de Lausanne, Switzerland
Samuel A. Inverso, The Australian National University, Australia
Rebecca Allen, University of California, Los Angeles, USA
Pattie Maes, MIT, USA

This paper expands the research on “subtle, intimate interfaces” for mobile HCI. Use of motionless gestures in a realistic multimodal interface and their noticeability are examined through a user study.

HOME SPIRITUALITY
SESSION CHAIR: Michael J. Muller, IBM, USA

PAPER | Sabbath Day Home Automation: “It’s Like Mixing Technology and Religion”
Allison Woodruff, Intel, USA
Sally Augustin, PlaceCoach, Inc., USA
Brooke Foucault, Intel, USA

Presents a qualitative study of the use of home automation by 20 Orthodox Jewish families. Offers insights and design implications for user experience with smart home technology and religious technology.
Enhancing Ubiquitous Computing with User Interpretation: Field Testing the Home Health Horoscope

William Gaver, Goldsmiths College, UK
Phoebe Sengers, Cornell University, USA
Tobie Kerridge, Goldsmiths College, UK
Joseph ‘Jofish’ Kaye, Cornell University, UK
John Bowers, Goldsmiths College, UK

The paper illustrates how designing to encourage user interpretation may supplement sensor-based inferencing in a home environment. Offers a new approach to those interested in developing domestic ubiquitous computing applications.

Home Networking and HCI: What Hath God Wrought?

Erika Shehan, W. Keith Edwards, Georgia Institute of Technology, USA

We analyze why home networking is difficult, argue that the HCI community needs to be involved in resolving these problems, and discuss potential research efforts in home network usability.

Project Massive: Self-Regulation and Problematic Use of Online Gaming

A. Fleming Seay, University of Texas, USA
Robert E. Kraut, Carnegie Mellon University, USA

This work contributes longitudinal analysis and examination of the concept of self-regulation to the ongoing discussion of problematic use of online video games.

The Life and Death of Online Gaming Communities: A Look at Guilds in World of Warcraft

Nicolas Ducheneaut, PARC, USA
Nicholas Yee, Stanford University, USA
Eric Nickell, Robert J. Moore, PARC, USA

Using longitudinal data from more than 300,000 characters, identifies some of the factors linked to group survival and performance in massively multiplayer online games.

Testing the Technology: Playing Games with Video Conferencing

Archer L. Batcheller, Brian Hilligoss, Kevin Nam, Emilee Rader, Marta Rey-Babarro, Xiaomu Zhou, University of Michigan, USA

Experimental results suggest playing games over video is as enjoyable as playing while collocated, despite video users developing artificial alliances. Implies that video can be successfully used in casual situations.

Using Heart Rate to Control an Interactive Game

Ville Nenonen, Aleksi Lindblad, Ville Häkkinen, Toni Laitinen, Mikko Jouhtio, Perttu Hämäläinen, Helsinki University of Technology, Finland

Describes an exercise game where heart rate is used for user interaction with any training form. Shows that heart rate can be used for user interaction with positive results.

Capturing Longitudinal Usability

Misha Vaughn, Oracle, USA
Catherine Courage, Salesforce.com, USA

In this SIG the attendees will discuss methods for capturing usability data over time. Specifically, we will share industry best practices, brainstorm alternative solutions, as well as compare and contrast usability engineering methods for capturing usability problems that persist over time. We will also explore why longitudinal research is not a more common UCD practice.

End User Software Engineering

Brad A. Myers, Carnegie Mellon University, USA
Margaret Burnett, Oregon State University, USA
Susan Wiedenbeck, Drexel University, USA
Andrew J. Ko, Carnegie Mellon University, USA

This SIG meeting has three purposes: to bring the results of a recent (February 2007) week-long “Dagstuhl” meeting on end-user software engineering to interested researchers at CHI, to incorporate attendees’ ideas and feedback into an emerging survey of the state of this interesting new subarea; and generally to bring together the community of researchers who are addressing this topic, with the companies that are creating end-user programming tools.
COURSE 21 | ROOM: A6

Web Usability for Assistive Technology
9:00–13:00

INSTRUCTORS:
Caroline Boyden, University of California, Berkeley, USA
Lucy Greco, University of California, Berkeley, USA

Benefits: Is your website accessible to users of assistive technology? How do you know? This course will provide you with practical knowledge and techniques to understand accessibility, evaluate your sites and applications, and improve user experience.

Intended Audience: Web designers and developers. Usability and HCI professionals. This is an introductory course; no specialized skills or knowledge are required. However, a familiarity with commonly-accepted accessibility standards is helpful.

COURSE 19 | ROOM: A7

Information Foraging Theory
9:00–13:00

INSTRUCTOR:
Peter Pirolli, PARC, USA

Benefits: This course aims to explain and predict how people will best shape themselves to their information environments, and how information environments can best be shaped to people. The approach involves a kind of reverse engineering in which the analyst asks (a) what is the nature of the task and information environments, (b) why is a given system a good solution to the problem, and (c) how is that solution realized (approximated) by mechanism. Typically, the key steps in developing a model of information foraging involve: (a) a rational analysis of the task and information environment (often drawing on optimal foraging theory from biology) and (b) a computational production system model of the cognitive structure of task. This course provides an introduction and overview of Information Foraging Theory, detailed examples, an overview of applications of the theory to the formulation of usability guidelines and cognitive engineering models, and discussion of new opportunities for research.

Intended Audience: The course is aimed primarily at researchers, although practitioners will definitely be welcomed to participate and learn from the course. It is assumed that participants will not faint if confronted with a few equations or raw code samples during the course.

COURSE 22 | ROOM: A6

Rapid Prototyping and Evaluation with Web Mashups
14:30–18:00

INSTRUCTORS:
M. Cameron Jones, University of Illinois, Urbana-Champaign, USA
Michael B. Twidale, University of Illinois, Urbana-Champaign, USA
Richard J. Urban, University of Illinois, Urbana-Champaign, USA

Benefits: This course is intended to appeal to a number of different kinds of CHI attendees: people who are intrigued by the mash-up concept and want to learn more, people interested in rapid lightweight development methods, people looking for ways to explore a possibility space, people interested in Web2.0 issues, people interested in ways to encourage development creativity and people who want a quick way of trying out a research concept.

Intended Audience: Participants should have previous programming experience and be comfortable with reading and writing code. Participants should also be familiar with HTML and CSS and be able to quickly and easily generate simple web pages. It is recommended, although not strictly required, that participants have some background in web programming. A strong background in general programming languages and practices can compensate for a lack of web-specific programming experience.

COURSE 17 | ROOM: A7

An Introduction to Designing for the Scent of Information
14:30–16:00

INSTRUCTOR:
Jared M. Spool, User Interface Engineering, USA

Benefits: If your users can’t find the content they are seeking, your site will fail. One of the biggest secrets of successful web sites is that they design for Scent. In recent research, we’ve uncovered that users know when they are on the right track to finding their content – they follow the Scent of Information. By understanding how users pick up and keep the scent, you can design more usable web sites. We’ll demonstrate how the successful sites provide a strong scent, and what happens when they don’t. Using the results of hundreds of usability tests, we’ll show you how users follow a scent trail and the different ways your design could be blocking scent. We’ll also discuss how the quality of links, page length, page density, and graphics affect whether users find the content they’re looking for.

Intended Audience: Web Designers & Usability Practitioners
COURSE 18 | ROOM: A7

Designing for the Scent of Information: Advanced Concepts
16:30–18:00

INSTRUCTOR:
Jared M. Spool, User Interface Engineering, USA

Benefits: You work hard providing top-notch content on your site. Will your users find it? If they don’t find it, all that effort is for nothing. Our research has uncovered three ways to predict when users will fail finding the content they desire. We’ll show you what these three predictors are and how to counter the effects in your design.

We will share the secrets behind successful designs including Lands’ End, the Bureau of Labor and Statistics, CNN, and the BBC. You’ll learn why trigger words are critical to users successfully finding their content, why the best sites prevent users from using Search, how exposing a site’s hierarchy can increase the success of the user, how designing longer pages helps users find what they seek, and how to best use lateral links and breadcrumbs.

Intended Audience: Web designers & usability practitioners who have had experience designing web sites. Attendance at the introductory course will provide the necessary background needed to understand this course but is not required.

COURSE 16 | ROOM: C3

Design of Spatial Applications
9:00–13:00

INSTRUCTOR:
Matthew Hockenberry, MIT, USA

Benefits: The course offers a practical, focused but detailed overview of traditional approaches to spatial representation. The course provides a review of the state of the art regarding technologies and designs for presenting spatial information and the user goals which necessitate this support. It provides a detailed set of resources for further exploration into each of these areas. The course additionally offers applied practical experience in formulating successful design goals and approaches that produce efficient, effective, and novel spatial applications that satisfy practical user needs. Inspiration, something we always need more of, also comes included.

Intended Audience: For all attendees with interest in the roles of spatial information in application development.

COURSE 20 | ROOM: C3

Building Affinity Diagrams to Reveal User Needs and Engage Developers
14:30–18:00

INSTRUCTOR:
Shelley Wood, InContext Enterprises, USA

Benefits: Affinity diagramming is fairly well known in the CHI community and used as a technique for organizing large amounts of information, especially qualitative data. However, the full potential of affinity diagramming — both as a technique for revealing design implications and as a powerful communication tool — is not being fully exploited.

This course teaches how to build more powerful affinities, offers a process for managing organizational issues, and provides a mechanism for using the affinity as a communication tool across the organization.

Intended Audience: No specific background is required. It is appropriate for all roles.

COURSE 14 | ALMADEN BALLROOM I

Card Sorting & Cluster Analysis for Information Architecture Design
9:00–18:00

INSTRUCTORS:
Jianming Dong, PayPal.com, USA
Janice James, Simply Usable Through Design, USA
Carol Righi, Perficient, Inc., USA
Larry Wood, Parallax, LLC, USA

Benefits: This course will provide user researchers with practical guidance and hands-on experience in the use of card sorting and cluster analysis methods and tools. After attending the course, attendees are expected to be able to: 1. Practice at a basic level the skills of planning and conducting card sorting and cluster analysis. 2. Determine the most appropriate methods and tools to fit the needs of specific projects. 3. Interpret card sort data to provide clear recommendations on architectural design.

Intended Audience: This course is designed for both those new to the field of usability/UCD/information architecture, as well as for advanced practitioners who are very familiar with the concept, but wish to learn a new tool and method. Attendees should have some background and familiarity with the concept of information architecture.
COURSE 15 | ALMADEN BALLROOM II

Understanding Users in Context: An In-Depth Introduction to Fieldwork
9:00–18:00

INSTRUCTORS:
Susan M. Dray, Dray & Associates, Inc., USA
David A. Siegel, Dray & Associates, Inc., USA

Benefits: You will learn how to plan for and carry out studies of users in the field. Rather than teaching a single methodology to do field research, we provide you with the tools to think critically and make informed decisions about the many planning and methodological choices you will have to make. For each technique, we identify its key challenges, while helping you learn how to get its benefits. You will have the chance to practice skills for several fieldwork techniques.

Intended Audience: This hands-on session is aimed at practitioners planning, doing, and leading observational field research projects, including developers, designers, and managers who are responsible for user experience or user requirements identification. This is an introductory to intermediate level tutorial. It will be useful for beginners in fieldwork, as well as those with some experience who want to broaden their knowledge of a range of approaches.