INTERACT 2009

Research & Practice

The 12th IFIP TC.13 Conference on Human-Computer Interaction

August 24 – 28, 2009
Uppsala, Sweden

FINAL PROGRAM

Conference Program Overview

Foreword

INTERACT 2009 is the twelfth of a series of INTERACT international conferences supported by the IFIP Technical Committee 13 on Human-Computer Interaction. This year, INTERACT is held in Uppsala (Sweden), organized by the Swedish Interdisciplinary Interest Group for Human Computer Interaction (STIMDI) in cooperation with the Department of Information Technology at Uppsala University.

As its predecessors, INTERACT 2009 will highlight, to both the academic and industrial world, the importance of Human-Computer Interaction and its most recent breakthroughs in current applications. Both experienced HCI researchers and professionals, as well as newcomers to the HCI field, interested in designing or evaluating interactive software, developing new interaction technologies, or investigating theoretical principles of HCI, will find in INTERACT 2009 a great forum to communicate with people of similar interests, to encourage collaboration, and to learn.

INTERACT 2009 has *Research & Practice* as its special theme. The reason we selected this theme is our observation that the research within the field has drifted away from the practical applicability of its results and the HCI practice has come to disregard the knowledge and development going on in the academic community. But, to continue to develop and prosper, the HCI community needs to pay more attention to the cooperation and mutual learning between research and practice. We see accidents happening in health care, airplanes crashing due to problems in the operation of it, we see tremendous money losses due to inefficiencies in the computer support. At the same time we see amazing development of new IT design, games, robots and applications designed for pleasure and fun. IT is an essential source for efficiency and productivity in work as well as a source for problems. For the future, what we need to do is learn from the positive development and study the mechanisms behind the successes in order to let such processes influence the more challenged application domains. May INTERACT 2009 provide such an inspiring meeting between research and practice.

INTERACT 2009 brings the conference to Sweden and the Nordic countries. Through conferences such as NordiCHI, the Nordic countries have come to be recognized as one of the major local communities within the field of HCI. Nordic participants are one of the biggest regional participation categories in the world. Nordic HCI focuses on utility, equality, participation and quality of our everyday life and work. With such traditions, the community has given names to the Scandinavian tradition of cooperative or participatory design and we aim to continue this route and hope to be in the forefront of the humane development of the field of HCI.

We hope that INTERACT 2009 will be remembered as a conference that brought the research and the practice closer together, focusing on making the computerized world a better place for everyone, regardless of functional abilities or particular requirements.

General co-chairs:

Jan Gulliksen
Uppsala university and KTH – Royal Institute of
Technology in Stockholm
Sweden

Lars Oestreicher
Uppsala university
Sweden

Welcome from the Technical Co-Chairs

The INTERACT 2009 conference is really a testament to the enthusiasm and collegial spirit amongst the HCI research and practitioner community worldwide. Thank you to all the authors who chose INTERACT 2009 as the vehicle to publish their research a total of 723 submissions were received for the Conference this year. Of these a total of 244 submissions were accepted for presentation at the Conference. These include:

    104 Full Research Papers
    79 Short Research Papers
    7 Interactive Poster Papers
    17 Workshops
    12 Tutorials
    3 Special Interest Groups
    6 Demonstrations
    3 Panels
    13 Doctoral Consortium Papers.

The acceptance rate for the research papers was 29% of full papers submitted for review and 20% of initial abstracts submitted. The acceptance rate for the short research papers and interactive posters were 39%. Each research paper was reviewed by between 3 and 6 members of the International Programme Committee. Our sincere gratitude goes to the all the International Programme Committeemembers who willingly helped out and ensured the high quality of the INTERACT Conference papers was properly maintained. Although some people had to be bullied into reviewing (sorry about that), everyone submitted their reviews on time without a murmur of complaint. Thank you all for the effort that you so obviously put into this task.
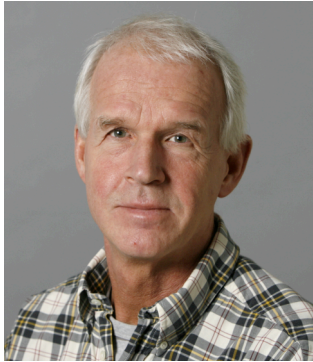
Finally we need express a special thank you to the Proceedings Publication Chair, Marco Winckler, who painstakingly put this Proceedings together.

Technical programme co-chairs

Paula Kotzé   Tom Gross
Meraka Institute   Bauhaus-University Weimar
South Africa   Germany

Welcome to INTERACT 2009 and to Uppsala!

The program of INTERACT 2009 has a lot to offer. Tutorials, workshops and scientific papers of a high quality illustrate the wide range of human-computer interaction (HCI) today. Ranging from theory to application, from cognitive science to new types of artefacts, and from administrative applications to nuclear power plants. I hope that you will find something in your own field as well as new experiences and influences. Take the chance to listen to and discuss with colleagues and new friends!

INTERACT 2009 has *Research & Practice* as its special theme. I hope that this will not mean research OR practice, but that we can contribute to bridge the gap between them. In HCI we have seen too many projects that have failed because we have not been able to transform research results into efficient methods to be applied in practice. Building on the tradition of the "Scandinavian School", I hope this conference can contribute to better IT solutions. Tomorrow's society will depend on technology. Let us all contribute to safety, efficiency and usability for all.

The main reason for your travel to Sweden and Uppsala is probably to participate in INTERACT 2009, the twelfth IFIP conference on Human-Computer Interaction. But I hope that you also will take some time to see Uppsala and its surroundings.

Uppsala was (probably) founded A.D. 1286, but has a longer history than that. Old Uppsala, some kilometres north of the modern city, was during the Viking age the capital of central Sweden. The old grave field and the museum are interesting to visit. Today the city of Uppsala is Sweden's fourth largest municipality. Perhaps best known for its university, the city also offers visitors beautiful surroundings, a lively cultural scene and a rapidly expanding business sector. The city's resident population is 190,000.

Uppsala University was founded in 1477 and is the oldest university in the Nordic countries. With its 9 faculties and 40,000 students, it is one of the most important universities in Scandinavia. Some famous researchers from the past are Carl Linnaeus and Anders Celsius. Their laboratories can still be visited. The university museum, Gustavianum, close to the cathedral, shows many interesting artefacts from the university's history as well as one of the only remaining anatomical theatres in the world.

On behalf of the town and the university, I welcome you here. Enjoy the conference and have a nice time in Uppsala!

Program chair
Bengt Sandblad
Department of Information Technology
Uppsala University, Sweden

IFIP Technical Committee 13 on Human-Computer Interaction (TC13 HCI)

TC13 HCI is truly international with members from 38 countries, who as HCI experts promote high quality research, collaboration, education and development world wide. TC13 HCI organizes universal conferences such as INTERACT as well as conferences, workshops and other events in special focus areas of HCI research. It is one of the technical committees within The International Federation for Information Processing (IFIP). IFIP is a non-governmental, non-profit, umbrella organization for national computer societies working in the field of information and communication technology. Its mission is to foster research and collaboration among researchers and practitioners worldwide.

The major Aims of TC13 HCI are:

- To utilize global collaboration and knowledge sharing in HCI research and practice in order increase the accessibility of Information and Communication Technologies (ICT) for all human beings and societies worldwide.

- To improve our knowledge about humans' interaction with computers through development and application of theories, methods and models of human-computer interaction in the analysis, design and evaluation of ICT.

- To encourage high quality empirical research with experiments and field studies in order to promote a better understanding of the relation between real life human-computer interaction and formal design and evaluation theories and methods.

- To support the innovative application of new and advanced information and communication technologies and techniques such as robot technology, virtual realities, small and large-scale distributed systems, multimedia and embedded technologies, mobile technologies and communication networks.

Scope of TC13 HCI

Research in Human-Computer Interaction is multidisciplinary, and it involves computer science, human science, social science, engineering and design, including guidelines and design practise. Examples of areas of research include:

- Analysis of user requirements to the design of interfaces and to the proper allocation of tasks and functions between computers and individual users, between computers and collaborative groups and organisations, and between humans and computers in different countries and cultures worldwide.

- Innovative designs of interfaces and functionality following users' perceptual, cognitive and emotional capabilities, their professional expertise and their social and cultural characteristics.

- Evaluation of new and existing ICT designs and the problems people have with ICT, such as utility, usability, accessibility and content information, problems which are determined by users' needs, their experiences, preferences and satisfaction criteria; as

well as evaluation of the acceptance of ICT solutions by organisations, cultures and societies.

- Analysis and evaluation of the design and use of ICT in different contexts, and analysis of the impact of ICT upon the behaviour of individual users and collaborating teams in private, organisational, social, and learning tasks.

Organisation of TC13 HCI

The committee members represent the involvement of their national computer society within IFIP in different, technical research areas of ICT. In TC13 HCI members represent their country in Human-Computer Interaction research and collaboration. Members of TC13 HCI meet annually in order to plan and organise conferences, workshops, meetings, and to discuss new initiatives and evaluate proposals. The current TC13 HCI chair is professor Annelise Mark Pejtersen, Denmark, who co-ordinates and organises these annual meetings together with vicechairs. In between annual meetings, the actual initiatives and the organisation of important research events, international collaboration and meetings are undertaken by the chairs together with vice chairs and secretaries of 7 Working Groups and 2 Special Interest Groups within TC13 HCI. Researchers in the HCI community can apply for membership of a Working Group or a Special Interest Group and thus participate in these collaborative research networks. Researchers without membership can also participate in working conferences and workshops and other events, which are announced on the TC13 HCI website http://www.ifip-hci.org/

Working Groups

WG 13.1 HCI Education. Chair Paula Kotze, South Africa

WG 13.2 Methodologies for User Centered Systems Design. Chair Peter Forbrig, Germany

WG 13.3 HCI and Disability. Chair Gerhard Weber, Belgium

WG 13.4/2.7 User Interface Engineering. Chair Nicholas Graham, Canada

WG 13.5 Human Error, Safety and System Development. Chair Philippe Palanque, France

WG 13.6 Human-Work Interaction Design. Chair Torkil Clemmensen, Denmark

WG 13.7 HCI and Visualization. Chair Achim Ebert, Germany

Special Interest Groups

- Interaction Design and International Development. Chair Andy Dearden, United Kingdom

- Interaction Design and Children. Chair Panos Markopoulos, The Netherlands

Applications for membership of Working Groups and Special Interest Groups are sent to the chairs using the mail address in the TC13 HCI website http://www.ifip-hci.org/

Mails can also be sent to the TC13 HCI chair Annelise Mark Pejtersen, Denmark.

Workshops, Tutorials and Doctoral Consortium at a Glance

Monday		Tuesday	
Morning	*Afternoon*	*Morning*	*Afternoon*
(DC) Doctoral Consortium (two days) (closed session) (Room F416)			
(W1) Culture and Technologies for Social Interaction (two day workshop) (Room A138)			
(W2) Ethics, Roles and Relationships in Interaction Design in Developing Regions (two day workshop) (Room B113)			
(W3) Human Aspects of Visualization (Room A144)		**(W9)** User eXperience Evaluation Methods in Product Development (UXEM'09) (Room A144)	
(W4) 2nd International Workshop on the Interplay between Usability Evaluation and Software Development (I-USED 2009) (Room B153)		**(W10)** Touch Affordance (Room B153)	
(W5) Workshop on Design & Evaluation of e-Government Applications and Services (DEGAS'2009) (Room A 156)		**(W11)** New Sociotechnical Insights in Interaction Design (Room A156)	
(W6) Towards a Manifesto for Living Lab co-creation (Room B139)		**(W12)** 4th Workshop on Software and Usability Engineering Cross-Pollination: Usability Evaluation of Advanced Interfaces (Room B159)	
(W7) Team meetings within clinical domains – exploring the use of routines and technical support for communication (Room B159)		**(W13)** New Challenges for Participation in Participatory Design in Family, Clinical, and other Asymmetrical non-work settings *is merged with* Innovation for an Inclusive Future (Room B105)	
(W8) Human-Computer Interaction Didactics – Is there Anybody Out There? (Room F332)		**(W14)** Designing for Naturally Engaging Experiences (B139)	
(T1) Eye Tracking in Human-Computer Interaction and Usability Research (Tommy Strandvall) (Room B105)		**(T3)** Measuring the Subjective User Experience (Maurits Kaptein) (Room F332)	
(T2) Understanding Users In Context: An In-depth Introduction to Fieldwork for User Centered Design ***(Susan M. Dray and David Siegel)*** (Room A122)		**(T4)** Combining Requirements and Interaction Design Through Usage Scenarios *(Hermann Kaindl)* (Room A122)	

The Main Conference at a Glance

Time	Wednesday, August 26	
08.00	*Registration opens*	
08.30	Opening Session with Welcome and Brian Shackel Award	
09.00	*Auditorium:*	*Opening Keynote*
10.30	Coffee Break, Interactive Posters, Exhitions	
11.00	*Auditorium:*	*User Experience 1*
	Hall B:	*Novel User Interfaces and Interaction Techniques 1*
	Hall C:	*User Interfaces for Web Applications and e-Commerce*
	Room K4:	*Human Cognition and Mental Load 1*
	Room K3:	*Human Error and Safety*
	Room K1:	*Tools for Design, Modelling and Evaluation 1*
12.30	Lunch	
13.30	*Auditorium:*	*User Experience 2*
	Hall B:	*Novel User Interfaces and Interaction Techniques 2*
	Hall C:	*HCI and Web Applications 1*
	Room K4:	*Human Cognition and Mental Load 2*
	Room K3:	*User Interfaces for Safety Critical Systems and Health Care 1*
	Room K1:	*Tools for Design, Modelling and Evaluation 2*
15.00	Coffee Break, Interactive Posters, Exhitions	
15.00	Auditorium:	Mobile Computing 1
	Hall B:	Novel User Interfaces and Interaction Techniques 3
	Hall C:	HCI and Web Applications 2
	Room K4:	Panel: Responsive Interfaces: Mobility, Emotion and Universality
	Room K3:	User Interfaces for Safety Critical Systems and Health Care 2
	Room K1:	Demos 1
18.00	Reception, The Botanical Garden	

Time	Thursday, August 27	
08.00	*Registration opens*	
08.30	*Morning Keynote*	
10.00	Coffee Break	
10.30	*Auditorium:*	*Mobile Computing 2*
	Hall B:	*Novel User Interfaces and Interaction Techniques 4*
	Hall C:	*INDUSTRY DAY: User Experience and Design Cases*
	Room K4:	*Human-Work Interaction Design*
	Room K3:	*Multi-User Interaction and Cooperation 1*
	Room K2:	*Ethics and Privacy*
	Room K1:	*Usability Evaluation Methods*
12.30	Lunch	
13.30	*Auditorium:*	*Mobile Computing 3*
	Hall B:	*Novel User Interfaces and Interaction Techniques 5*
	Hall C:	*INDUSTRY DAY: Usability, User-Centred Design and Agile Development*
	Room K4:	*SIG: Designing Interaction for Next Generation Personal Computing*
	Room K3:	*Multi-User Interaction and Cooperation 2*
	Room K2:	*International and Cultural Aspects of HCI*
	Room K1:	*Child Computer Interfaces*
15.00	Coffee Break	
15.30	*Auditorium:*	*Mobile Computing 4*
	Hall B:	*Interacting with Pointing Devices*
	Hall C:	*INDUSTRY DAY: HCI, Design and Market Values, Closing Keynote*
	Room K4:	*Evaluation 1*
	Room K3:	*Panel: Biometrics in Practise: What Does HCI Have to Say?*
	Room K2:	*Demos 2*
	Room K1:	*Interaction with Small and Large Displays*
19.30	Conference Dinner, Uppsala Castle	

Time	Friday, August 28	
08.00	Registration opens	
08.30	Auditorium:	Panel: Demarcating User Experience
	Hall B:	Multimodal Interfaces 1
	Hall C:	Affective HCI and Emotion
	Room K4:	Evaluation 2
	Room K3:	Interaction with Small and Large Displays
	Room K1:	Games, Fun and Aesthetic Design 1
10.30	Coffee Break	
11.00	Auditorium:	Accessibility 1
	Hall B:	Multimodal Interfaces 2
	Hall C:	Model-Based Design of Interactive Systems
	Room K4:	Social Media/Social Networks
	Room K3:	Games, Fun and Aesthetic Design 2
12.30	Lunch	
13.30	Auditorium:	Accessibility 2
	Hall B:	Multimodal Interfaces 3
	Hall C:	Tangible User Interfaces and Robotics
	Room K4:	SIG: Postgraduate Studies in the Field of HCI
	Room K3:	Visualisation Techniques
15.30	Coffee Break	
15.30	Closing Keynote	
16.30	Conference Closing, and Announcing INTERACT 2011	

Interactive Posters

The inteactive posters are presented during the coffee breaks on Wednesday:

Measuring Emotional Wellbeing With a Non-Intrusive Bed Sensor
Gert van der Vloed and Jelle Berentsen

An Integrated Approach for Creating Service-Based Interactive Applications
Marius Feldmann, Jordan Janeiro, Tobias Nestler, Gerald Huebsch, Uwe Jugel, Andre Preussner and Alexander Schill

Using a Dynamic Model to Simulate the Heuristic Evaluation of Usability
Nuria Hurtado, Mercedes Ruiz and Jesús Torres

Interacting With Case Work Documents Using Timelines
Morten Bohøj and Niels Olof Bouvin

A Dynamic Environment for Video Surveillance
Paolo Bottoni, Maria De Marsico, Stefano Levialdi, Giovanni Ottieri, Mario Pierro and Daniela Quaresima

Implicit Interaction: A Modality for Ambient Exercise Monitoring
Jie Wan, Michael O'Grady and Gregory O'Hare

Using Avatars for Speaker Identification in Captioning
Quoc Vy and Deborah Fels

Doctoral Consortium

The Doctoral Consortium is a closed session where PhD students get their submitted work discussed by experienced researchers.

Faculty members:

Antonella De Angeli, University of Manchester, U.K.
Amy Karlson, Microsoft Research, U.S.
Alex Olwal, KTH, Sweden
Else Nygren, Sweden
Kasper Hornbæk, Denmark

Submitted presentations:

The Role of Personal and Shared Displays in Scripted Collaborative Learning
Sara Streng

Towards a Flexible User Simulation for Evaluating Spoken Dialogue Systems
Dmitry Butenkov and Sebastian Möller

Designing an Artificial Robotic Interaction Language
Omar Mubin

Development of a Method for Evaluating the Usability of In-Vehicle Information Systems (IVISs)
Catherine Harvey

User Experience: Tools for Developers
Anssi Jääskeläinen

Blended Interaction Design: A Spatial Workspace Supporting HCI and Design Practice
Florian Geyer

User Aware Technology. From Inter-Human Awareness to Technology-User Awareness
Ditte Hvas Mortensen

Designing Mobile Service Experiences, the Role of Emotional Dimension
Teresa Sarmento, Lia Patricio and José Bartolo

Retrieval of User Interface Templates Based on Tasks
Jordan Janeiro, Thomas Springer, Simone Barbosa and Alexander Schill

Human-Computer Interaction Techniques in Firefighting
Sebastian Denef

Supporting Aphasics for Capturing, Organizing and Sharing Personal Experiences
Abdullah Al Mahmud

Evaluating Human Computer Interaction through Self-Rated Emotion
Danielle Lottridge

Wednesday, August 26

In the program, an "(F)" indicates a presentation of a *full* paper with a duration of 20+10 minutes, and an "(S)" indicates a presentation of a *short* paper, with a duration of 10+5 minutes. In all sessions, the short papers are given at the end of the session, in order to make it easier to change between sessions.

Conference Opening
8.30 – 9.00   **Auditorium**

Welcome
Jan Gulliksen and Lars Oestreicher, General co-chairs

TC13 Welcome and Brian Shackel Award
Annelise Mark Pejtersen, TC.13 Chair

Opening Keynote
Session chair: Jan Gulliksen
9.00 – 10.30   **Auditorium**

Mobile Life -– Body and Interaction
Kristina Höök, Professor of HCI at the University of Stockholm, Sweden, and coordinator of the Mobile Life Centre

Keynote Abstract on page 46.

User Experience 1
Session chair: Gitte Lindgaard
11.00 – 12.30 Paper session   **Auditorium**

Dimensions of Context Affecting User Experience in Mobile Work (F)
Heli Wigelius and Heli Väätäjä

When Joy Matters: The Importance of Hedonic Stimulation in Collocated Collaboration with Large-Displays (F)
Jasminko Novak and Susanne Schmidt

What Can Needs Tell Us About User Experience? (S)

Annika Wiklund-Engblom, Anette Bengs and Susanne Sperring

The Strength of Pairwise Comparison Scaling for UX Evaluations with Preschoolers (S)

Bieke Zaman

Novel User Interfaces and Interaction Techniques 1
Session chair: Kari-Jouko Räihä
11.00 – 12.30 Paper Session   **Hall B**

Five: Enhancing 3D Wall Displays with a 2D High-Resolution Overlay (F)

Daniel Steffen, Baudisch Patrick, Ebert Achim, Deller Matthias and Dannenmann Peter

Improving Window Switching Interfaces (F)

Susanne Tak, Andy Cockburn, Keith Humm, David Ahlstroem, Carl Gutwin and Joey Scarr

The Panopticon and the Performance Space: HCI Reaches Within (S)

Ann Light, Peter Wright

User Interfaces for Web Applications and e-Commerce
Session chair: Tom McEwan
11.00 – 12.30 Paper session   **Hall C**

Reflection of a Year Long Model-Driven Business and UI Modeling Development Project (F)

Noi Sukaviriya, Senthil Mani and Vibha Sinha

Designing Tools for Supporting User Decision Making in e-Commerce (F)

Alistair Sutcliffe and Faisal Al-Qaed

Designing for Culturally Contextualized Learning Activity Planning: Matching Learning Theories and Practice (F)

Aparecido Fabiano Pinatti de Carvalho, Junia Coutinho Anacleto and Vania Paula de Almeida Neris

Human Cognition and Mental Load 1
Session chair: Monique Noirhomme-Fraiture
11.00 – 12.30 Paper Session   **Room K4**

Distinguishing Difficulty Levels with Non-Invasive Brain Activity Measurements (F)

Audrey Girouard, Erin Treacy Solovey, Leanne M. Hirshfield, Krysta Chauncey, Angelo Sassaroli, Sergio Fantini and Robert J.K. Jacob

Aspects of Auditory Perception and Cognition for Usable Display Resolution in Data Sonification (F)

Johan Kildal

Human Error and Safety
Session chair: Anders Jansson
11.00 – 12.30 Paper Session   **Room K3**

Resilience of Interaction Techniques to Interrupts – A Formal Model-Based Approach (F)

Maurice ter Beek, Giorgio Faconti, Mieke Massink, Philippe Palanque and Marco Winckler

Adaptive Security Dialogs for Improved Security Behavior of Users (F)

Frederik De Keukelaere, Sachiko Yoshihama, Scott Trent, Yu Zhang, Lin Luo and Mary Ellen Zurko

Perceptions of Risk & Control: Understanding Acceptance of Advanced Driver Assistance Systems (F)

Somya Joshi, Thierry Bellet and Angelos Amditis

Detection of Pilot Errors in Data by Combining Task Modeling and Model Checking (S)

Florian Frische, Tomasz Mistrzyk and Andreas Lüdtke

Tools for Design, Modelling and Evaluation 1
Session chair: Simone Barbosa
11.00 – 12.30 Paper Session   **Room K1**

Designing with Only Four People in Mind? – A Case Study of Using Personas to Redesign a Work-Integrated Learning Support System (F)

Amir Dotan, Neil Maiden, Valentina Lichtner and Lola Germanovich

Play-Personas Motivations, Goals, Behaviours and Belief Systems in User Centred Game Design (S)

Alessandro Canossa and Anders Drachen

Developing and Validating Personas in e-Commerce: A Heuristic Approach (S)

Volker Thoma and Bryn Williams

User Experience 2
Session chair: Kristina Groth
13.30 – 15.00 Paper Session   **Auditorium**

The Effect of Brand on the Evaluation of Websites (F)

Antonella De Angeli, Jan Hartmann and Alistair Sutcliffe

Does Branding Need Web Usability? A Value-Oriented Empirical Study (F)

Davide Bolchini, Franca Garzotto and Fabio Sorce

What is an Activity? Appropriating an Activity-Centric System (F)

Svetlana Yarosh, Tara Matthews, Thomas Moran and Barton Smith

Novel User Interfaces and Interaction Techniques 2
Session chair: Yngve Sundblad
13.30 – 15.00 Paper Session   **Hall B**

Exploring the Use of Discrete Gestures for Authentication (F)

Ming Ki Chong and Gary Marsden

AirMouse: Finger Gesture for 2D and 3D Interaction (F)

Michael Ortega and Laurence Nigay

Follow My Finger Navigation (S)

Rami Ajaj, Frédéric Vernier and Christian Jacquemin

GorillaFist: Integrated Typing and Pointing (S)

Iman Habib, Niklas Berggren, Erik Rehn, Gustav Josefsson, Andreas Kunz and Morten Fjeld

HCI and Web Applications 1
Session chair: Marco Winckler
13.30 – 15.00 Paper Session   **Hall C**

What's Next? A Visual Editor for Correcting Reading Order (F)

Daisuke Sato, Masatomo Kobayashi, Hironobu Takagi and Chieko Asakawa

Looking Ahead: A Comparison of Page Preview Techniques for Goal-Directed Web Navigation (F)

Aaron Genest, Regan Mandryk, David Pinelle, Adrian Reetz and Carl Gutwin

Comparison of Tag Cloud Layouts: Task-Related Performance and Visual Exploration (F)

Steffen Lohmann, Jürgen Ziegler and Lena Tetzlaff

Human Cognition and Mental Load 2
Session chair: Paula Kotzé
13.30 – 15.00 Paper Session   **Room K4**

Simulating Perceptive Processes of Pilots to Support System Design (F)

Andreas Luedtke and Jan-Patrick Osterloh

Cognitive Load Measurement from User's Linguistic Speech Features for Adaptive Interaction Design (S)

M. Asif Khawaja, Fang Chen, Christine Owen and Gregory Hickey

Using Psychophysiological Measurements in Physically Demanding Virtual Environments (S)

Domen Novak, Matja Mihelj and Marko Munih

User Interfaces for Safety Critical Systems and Health Care 1
Session chair: Effie Law
13.30 – 15.00 Paper Session   **Room K3**

From Paper to PDA: Design and Evaluation of a Clinical Ward Instruction on a Mobile Device (F)

Anne Marie Kanstrup and Jan Stage

Designing User Interfaces for Smart-Applications for Operating Rooms and Intensive Care Units (F)

Martin Christof Kindsmüller, Maral Haar, Hannes Schulz and Michael Herczeg

Interactive Therapeutic Multi-Sensory Environment for Cerebral Palsy People (S)

Cesar Mauri, Agustí Solanas, Toni Granollers, Joan Bages and Mabel Garcia

Designing Systems for Health Promotion and Autonomy in Older Adults (S)

Helena Lindgren and Ingeborg Nilsson

Tools for Design, Modelling and Evaluation 2
Session chair: Peter Forbrig
13.30 – 15.00 Paper Session   **Room K1**

Picking Up Artifacts: Storyboarding as a Gateway to Reuse (F)

Shahtab Wahid, Stacy M. Branham, Lauren Cairco, D. Scott McCrickard and Steve Harrison

Are User Interface Pattern Languages Usable? A Report from the Trenches (S)

Marco Winckler, Regina Bernhaupt and Florence Pontico

Get Your Requirements Straight: Storyboarding Revisited (S)

Mieke Haesen, Kris Luyten and Karin Coninx

Mobile Computing 1
Session chair: Nicola Bidwell
15.30 – 17.30 Paper Session   **Auditorium**

An Evaluation Framework for Mobile User Interfaces (F)

Marco de Sá and Luís Carriço

Exploring Cross-Device Web Use on PCs and Mobile Devices (F)

Shaun Kane, Amy Karlson, Brian Meyers, Paul Johns, Andy Jacobs and Greg Smith

Fancy a Drink in Canary Wharf?: A User Study on Location-Based Mobile Search (F)

Alia Amin, Sian Townsend, Lynda Hardman and Jacco van Ossenbruggen

Bringing Digital Storytelling to the Mobile (S)

Thomas Reitmaier and Gary Marsden

Exploring User Requirements for Non-Visual Mobile Navigation Systems (S)

Charlotte Magnusson, Kirsten Rassmus-Gröhn, Konrad Tollmar and Hanna Stigmar

Novel User Interfaces and Interaction Techniques 3
Session chair: Joaquim Jorge
15.30 – 17.30 Paper Session   **Hall B**

Understanding Multi-Touch Manipulation for Surface Computing (F)

Chris North, Tim Dwyer, Bongshin Lee, Danyel Fisher, Petra Isenberg, George Robertson and Kori Inkpen

How Not to Become a Buffoon in Front of a Shop Window: A Solution Allowing Natural Head Movement for Interaction with a Public Display (F)

Omar Mubin, Tatiana Lashin and Evert van Loenen

Chucking: A One-Handed Document Sharing Technique (F)

Nabeel Hassan, Mahfuzur Rahman, Pourang Irani and Peter Graham

This Just In! Your Life in the Newspaper (F)

Bruno Antunes, Tiago Guerreiro and Daniel Gonçalves

HCI and Web Applications 2
Session chair: Helen Petrie
15.30 – 17.30 Paper Session   **Hall C**

Bringing Web 2.0 to the Old Web: A Platform for Parasitic Applications (S)

Florian Alt, Albrecht Schmidt, Richard Atterer and Paul Holleis

Are Ten Participants Enough for Evaluating Information Scent of Web Page Hyperlinks? (S)

Christos Katsanos, Nikolaos Tselios and Nikolaos Avouris

Navigational Consistency in Websites: What Does it Mean to Users? (S)

Helen Petrie, George Papadofradkakis, Christopher Power and David Swallow

CloudMonster: Support Flexible Browsing and Searching within Personal Music Collections (S)

Ya-Xi Chen, Matthias Hoyer and Andreas Butz

Combinable Tabs: An Interactive Method of Information Comparison Using a Combinable Tabbed Document Interface (S)

Gonglue Jiang, Chen Zhao, Matt Scott and Fang Zou

Web User Modeling via Negotiating Information Foraging Agent (S)

Xuehong Tao, Yin-Leng Theng and Terence Ting

Responsive Interfaces: Mobility, Emotion and Universality
15.30 – 17.30 Panel   **Room K4**

Mark Chignell, Naotsune Hosono, Deborah Fels, Danielle Lottridge and John Waterworth

CLINICAL SURFACES – Activity-Based Computing for Distributed Multi-Display Environments in Hospitals (F)

Jakob Bardram, Jonathan Bunde-Pedersen and Afsaneh Doryab

Designing a Safer Interactive Healthcare System – The Impact of Authentic User Participation (F)

Kathryn L Went, Peter Gregor and Ian W Ricketts

A Novel Approach for Creating Activity-Aware Applications in a Hospital Environment (F)

Jakob Bardram

Investigating CAPTCHAs Based on Visual Phenomena (S)

Thomas Franke, Christian Bauckhage and Anja Naumann

Take Three Snapshots – An Intuitive Tool for Fast Freehand Acquisition of 3D Objects

Gabriele Peters and Klaus Häming

Interactive and Lightweight Mechanisms to Coordinate Interpersonal Privacy in Mediated Communication

Natalia Romero, Panos Markopoulos and Laurens Boer

Multimodal Interaction with Speech, Gestures and Haptic Feedback in a Media Center Application

Markku Turunen, Jaakko Hakulinen, Juho Hella, Juha-Pekka Rajaniemi, Aleksi Melto, Erno Mäkinen, Jussi Rantala, Tomi Heimonen, Tuuli Laivo, Hannu Soronen, Mervi Hansen, Pellervo Valkama, Toni Miettinen and Roope Raisamo

Conference Reception In Uppsala Botanical Garden
Wednesday, August 26 18.00 – 20.00
Orangeriet

A conference reception will take place in the Orangery of Uppsala Botanical Garden in the presence of the deputy vice chancellor of the university, professor Roland Roberts. Apart from the wonderful surrounding the Orangery currently has an intriguing art exhibition "Face II Face". Don't miss it!

Your name tag is your ticket to a light snack and a drink. More drinks can be purchased from the bar.

Uppsala Botanical Garden was founded in 1655 by Olaus Rudbeck and got its main structure by Carl Linnaeus in 1745. It contains 11.000 species from all over the world

Thursday, August 27

Lies, Damn Lies and Privacy

Nicklas Lundblad, Deputy CEO of the Stockholm Chamber of Commerce

Keynote Abstract on page 47

Multi-Display Composition: Supporting Display Sharing for Collocated Mobile Devices (F)

Kent Lyons, Trevor Pering, Barbara Rosario, Shivani Sud and Roy Want

Animated Transitions for Adaptive Small Size Mobile Menus (F)

Jussi Huhtala, Jani Mäntyjärvi, Aino Ahtinen, Leena Ventä and Minna Isomursu

Investigating the Use of Voice and Ink for Mobile Micronote Capture (F)

Adrienne Andrew, Amy Karlson and A.J. Brush

SmartActions: Context-Aware Mobile Phone Shortcuts (S)

Akos Vetek, John Adrian Flanagan, Ashley Colley and Tuomas Keränen

Can You Feel It? -- Using Vibration Rhythms to Communicate Information in Mobile Contexts (S)

Sebastian Feige

Novel User Interfaces and Interaction Techniques 4
Session chair: Nils-Erik Gustafsson
10.30 – 12.30 Paper session   **Hall B**

Instruction, Feedback and Biometrics: The User Interface for Fingerprint Authentication Systems (F)

Chris Riley, Graham Johnson, Heather McCraken and Ahmed Al-Saffar

Measurement of Olfactory Characteristics for Two Kinds of Scent in a Single Breath (F)

Kaori Ohtsu, Junta Sato, Yuichi Bannai and Kenichi Okada

Keyboard before Head Tracking Depresses User Success in Remote Camera Control (F)

Dingyun Zhu, Tom Gedeon and Ken Taylor

QualiTrack: Highspeed TUI Tracking for Tabletop Applications (S)

Ramon Hofer, Thomas Nescher and Andreas Kunz

Augmenting Surface Interaction Through Context-Sensitive Mobile Devices (S)

Alex Olwal

Human-Work Interaction Design
Session chair: Annelise Mark Pejtersen
10.30 – 12.30 Paper session   **Room K4**

Improving the Cost Structure of Sensemaking: Analysing User Concepts to Inform Information System Design (F)

Simon Attfield and Ann Blandford

Vote and Be Heard: Adding Back-Channel Cues to Social Mirrors (F)

Tony Bergstrom and Karrie Karahalios

Ownership and Evolution of Local Process Representations (F)

Thomas P. Moran, Tara L. Matthews, Laurian Vega, Barton Smith, James Lin and Stephen Dill

Designing for Improving Verbal Patient Transfer (S)

Max Eichenbrenner, Abdullah Al Mahmud and Omar Mubin

Exploring Manual Interaction and Social Behaviour Patterns in Intensely Collaborative Teamwork (S)

Natalie Ruiz, Kelvin Cheng and Markus Rittenbruch

Multi-User Interaction and Cooperation 1
Session chair: Janet Read
10.30 – 12.30 Paper session   **Room K3**

Sharing Map Annotations in Small Groups: X Marks the Spot (F)

Ben Congleton, Jackie Cerretani, Mark W Newman and Mark S Ackerman

Effect of Peripheral Communication Pace on Attention Allocation in a Dual-Task Situation (F)

Sofiane Gueddana and Nicolas Roussel

Is the Writing on the Wall for Tabletops? (F)

Nadia Pantidi, Yvonne Rogers and Hugh Robinson

Investigating the Effect of Hyperlink Information Scent on Users' Interaction with a Web Site (S)

Nikolaos Tselios, Christos Katsanos and Nikolaos Avouris

Ethics and Privacy
Session chair: Ute Klotz
10.30 – 12.30 Paper session   Room K2

Staging Urban Interactions With Media Facades (F)

Martin Brynskov, Peter Dalsgaard, Tobias Ebsen, Jonas Fritsch, Kim Halskov and Rune Nielsen

Location-Based Services in Public Places: Design for Privacy (F)

Alexandre Alapetite, Henning Boje Andersen, John Paulin Hansen, Lone Malmborg and Jacob Thommesen

'I Know That You Know' – Ascertaining Mutual Awareness of Recipient's Availability Status in Instant Messaging Applications (F)

Agnieszka Matysiak Szostek and Berry Eggen

Automatic Translation System to Spanish Sign Language With a Virtual Interpreter (S)

Sandra Baldassarri, Eva Cerezo and Francisco Royo-Santas

Towards an Approach to Ethics and HCI Development Based on Løgstrup's Ideas (S)

Sandra Burri Gram-Hansen

Usability Evaluation Methods
Session chair: Masaaki Kurosu
10.30 – 12.30 Paper session   Room K1

Hello World! – Experiencing Usability Methods Without Usability Expertise (F)

Elina Eriksson, Jan Gulliksen and Åsa Cajander

Supporting Worth Mapping With Sentence Completion (F)

Gilbert Cockton, Sari Kujala, Piia Nurkka and Taneli Hölttä

What is an Activity? Appropriating an Activity-Centric System (F

Svetlana Yarosh, Tara Matthews, Thomas Moran and Barton Smith

Sharing Usability Problem Sets Within and Between Groups (S)

Gudmundur Freyr Jonasson and Ebba Thora Hvannberg

Obstacles to Option Setting: Initial Results With a Heuristic Walkthrough Method (S)

Silvia Gabrielli and Anthony Jameson

Mobile Computing 3
Session chair: Jaime Sanchez
13.30 – 15.00 Paper session   **Auditorium**

An Evaluation of Product Identification Techniques for Mobile Phones (F)

Felix von Reischach, Florian Michahelles, Dominique Guinard, Robert Adelmann, Elgar Fleisch and Albrecht Schmidt

Presence, Routines, and Technology Discrepancy -– Information Exchange Between Parents and Preschool Teachers (F)

Stina Nylander

TimeTilt: Using Sensor-Based Gestures to Travel Through Multiple Applications on a Mobile Device (S)

Anne Roudaut, Mathias Baglioni and Eric Lecolinet

NFC-Based Mobile Interactions With Direct-View Displays (S)

Khoovirajsingh Seewoonauth, Enrico Rukzio, Robert Hardy and Paul Holleis

Novel User Interfaces and Interaction Techniques 5
Session chair: Steffan Lohman
13.30 – 15.00 Paper session   **Hall B**

Designing Novel Image Search Interfaces by Understanding Unique Characteristics and Usage (F)

Paul André, Ed Cutrell, Desney Tan and Greg Smith

Crossmedia Systems Constructed Around Human Activities: A Field Study and Implications for Design (F)

Katarina Segerståhl

Query Suggestion for On-Device Troubleshooting (S)

Frederic Roulland, Stefania Castellani, Ye Deng, Antonietta Grasso and Jacki O'Neill

Memorization and Information-Retrieval Behaviors (S)

Jun-ichiro Watanabe and Youichi Horry
(This paper has been moved to this session due to authors late arrival at the conference).

Special Interest Group (SIG)
13.30 – 15.00   **Room K4**

Designing Interaction for Next Generation Personal Computing

Giorgio De Michelis, Marco Loregian, Claudio Moderini, Patrizia Marti, Cesare Colombo, Liam Bannon, Cristiano Storni and Marco Susani

Multi-User Interaction and Cooperation 2
Session chair: Nikolaos Avouris
13.30 – 15.00 Paper session   **Room K3**

Interpersonal Privacy Management in Distributed Collaboration: Situational Characteristics and Interpretive Influences (F)

Sameer Patil, Alfred Kobsa, Ajita John, Lynne S. Brotman and Doree Seligmann

Assessing the "Quality of Collaboration" in Technology-Mediated Design Situations With Several Dimensions (S)

Jean-Marie Burkhardt, Francoise Détienne, Anne-Marie Hébert and Laurence Perron

A Multi-Touch Tool for Co-Creation (S)

Geke Dina Simone Ludden and Tom Broens

GColl: A Flexible Videoconferencing Environment for Group-to-Group Interaction (S)

Petr Slovak, Pavel Troubil and Petr Holub

Space as a Resource in Creative Design Practices (S)

Dhaval Vyas, Gerrit van der Veer, Anton Nijholt and Dirk Heylen

International and Cultural Aspects of HCI
Session chair: Andrew Dearden
13.30 – 15.00 Paper session   **Room K2**

The Perception of Cultural Differences in Online Self-presentation (F)

Yifan Jiang, Oscar de Bruijn and Antonella De Angeli

Designing for Customs of Doing & Saying in Rural Communities (F)

Nicola J Bidwell

Faces of Privacy: Effect of Culture and Context (S)

Kari-Jouko Räihä and Saila Ovaska

Fair Partnerships – Working With NGOs (S)

Sylvian Gitau and Gary Marsden

Child Computer Interfaces
Session chair: Silvia Lindtner
13.30 – 15.00 Paper session   **Room K1**

Biting, Whirling, Crawling – Children's Embodied Interaction With Walk-Through Displays (F)

Satu Jumisko-Pyykkö, Mandy Weitzel and Ismo Rakkolainen

Causes of Simultaneous Keystrokes in Children and Adults (S)

Akiyo Kano and Janet C Read

Evaluating a Tangible Game Video Console for Kids (S)

Javier Marco, Eva Cerezo and Sandra Baldassarri

Exploring Geometric Shapes With Touch (S)

Thomas Pietrzak, Andrew Crossan, Stephen A. Brewster, Benoît Martin and Isabelle Pecci

Gender and Cultural Differences in Perceiving Game Characters of Digital Educational Games (S)

Effie L-C Law

Mobile Computing 4
Session chair: Janet Wesson

15.30 – 17.30 Paper session	Auditorium

Design and Evaluation of an Adaptive Mobile Map-Based Visualisation System (F)

Bradley van Tonder and Janet Wesson

Exploring Multimodal Navigation Aids for Mobile Users (F)

Teija Vainio

Feature Use in Mobile Video Creation (S)

Arto Puikkonen, Jonna Häkkilä, Rafael Ballagas and Jani Mäntyjärvi

Glaze: A Visualization Framework for Mobile Devices (S)

Roberto Sousa, Valentina Nissi and Ian Oakley

A Collaborative Approach to Minimize Cellphone Interruptions (S)

Ashraf Khalil

Interacting with Pointing Devices
Session chair: Gerrit van der Veer

15.30 – 17.30 Paper session	Hall B

Acquisition of Animated and Pop-up Targets (F)

Guillaume Faure, Olivier Chapuis and Michel Beaudouin-Lafon

An Optical Pen Tracking System as Alternative Pointing Device (F)

Ingmar Seeliger, Ulrich Schwanecke and Peter Barth

Did Minority Report Get it Wrong? Superiority of the Mouse over 3D Input Devices for a 3D Placement Task (F)

Francois Berard, Jessica Ip, Mitchel Benovoy, Dalia El-Shimy, Jeff Blum and Jeremy R. Cooperstock

The MAGIC Touch: Combining MAGIC-Pointing With a Touch-Sensitive Mouse (F)

Heiko Drewes and Albrecht Schmidt

Evaluation 1
Session chair: Marta Larusdottir

15.30 – 17.30 Paper session	Room K4

Evidence Based Design of Heuristics for Computer Assisted Assessment (F)

Gavin Sim, Janet Read and Gilbert Cockton

Physical Fidelity: Exploring the Importance of Physicality on Physical-Digital Conceptual Prototyping (F)

Joanna Hare, Steve Gill, Gareth Loudon, Devina Ramduny-Ellis and Alan Dix

Considering Cost in Usability Evaluation of Mobile Applications: Who, Where and When (S)

Georgios Fiotakis, Dimitrios Raptis and Nikolaos Avouris

Is the 'Figure of Merit' Really That Meritorious? (S)

Jarinee Chattratichart and Gitte Lindgaard

User-Centered Evaluation of the Responsiveness of Applications (S)

Gerd Waloszek and Ulrich Kreichgauer

Evaluation of User Interface Design and Input Methods for Applications on Mobile Touch Screen Devices (S)

Florence Balagtas-Fernandez, Jenny Forrai and Heinrich Hussmann

Panel	
15.30 – 17.30	**Room K3**

Biometrics in Practice: What does HCI have to say?

Chris Riley, Karen Renaud, Tom McEwan, Lynne Coventry and Linda Sorensen

Demos	
15.30 – 17.30	**Room K2**

Socio-Technical Evaluation Matrix (STEM): A Collaborative Tool to Support and Facilitate Discussion on Socio-Technical Issues of a Design Process

Souleymane Boundaouda Camara and Jose Abdelnour-Nocera

Liberating Expression: A Freehand Approach to Business Process Modeling

Nicolas Mangano and Noi Sukaviriya

Social Circles: A 3D User Interface for Facebook

Diego Rodrigues and Ian Oakley

Interaction with Small and Large Displays 1	
Session chair: Achim Ebert	
15.30 – 17.30 Paper session	**Room K1**

A Comparison of Direct and Indirect Multitouch Input for Large Surface (F)

Dominik Schmidt, Florian Block and Hans Gellersen

Evaluating Gaze and Touch Interaction and Two Feedback Techniques on a Large Display in a Shopping Environment (F)

Angelique Kessels, Evert van Loenen and Tatiana Lashina

Design and Evaluation of a Large Interactive Display to Support Social Interaction at Work (S)

Sanjin Pajo, Senka Zubic, Janieke Sturm and Aga Matysiak

Interactivity for Museums: Designing and Comparing Sensor-Based Installations (S)
Pedro Campos, André Dória and Magno Sousa

Leaf Menus: Linear Menus With Stroke Shortcuts for Small Handheld Devices (S)
Anne Roudaut, Gilles Bailly, Eric Lecolinet and Laurence Nigay

<table>
<tr><td colspan="2">Conference Dinner at Uppsala Castle</td></tr>
<tr><td>Thursday, August 27 at 19.30</td><td>Rikssalen</td></tr>
</table>

The conference dinner will take place at Uppsala castle in Rikssalen in the presence of the major of Uppsala. Entrance to Rikssalen is done from the castle yard in the inner corner. Accessible entrance is from the back side in the South Tower.

From the castle you have a wonderful view of the entire city. The castle is also the residence of the county governor.   The castle overlooks the botanical garden and the Swan pond from which the picture has been taken.

The Swedish king Gustav Vasa started building Uppsala castle in 1549. Several historical events have taken place here, the Sture assassination in 1567, Gustav II Adolf decided to start the 30 year war from here, queen Christina's resignation 1654 was made here. In 1702 the castle burned to the ground and after a longer period of decline it was decided to rebuild it.

Industry Day, Thursday, August 27

The *Industry Day* provides researchers and practitioners with an opportunity to hear invited presentations and reflections on the practice of HCI in Swedish and international companies. The *Industry Day* is open to all conference participants.

Thursday 8.00 – Registration opens at Uppsala Konsert & Kongress

Morning keynote
Session chair: Lars Oestreicher
Thursday 8.30 – 10.00   **Auditorium**

Release Often and Iterate – the Science Behind the Motto
Nicklas Lundblad, , Deputy CEO of the Stockholm Chamber of Commerce

User Experience and Design Cases
Session chair: Tomas Berns
Thursday 10.30 – 12.30   **Hall C**

User Experience – From Business to Research and Practice
Virpi Roto, Principal Scientist, Nokia Research Center, Finland

Good user experience (UX) is increasingly important for profitable business: Once utility and usability are taken for granted, successful companies design for experiences. But how to manage the fuzzy thing called user experience in product development? This talk enlightens how Nokia's business goals led to UX research and how we applied the UX theory into practice.

InfraCAM – A Design Case
Bengt Göransson, Frontwalker/IT-Arkitekterna, Sweden

This presentation explores the user-centred design of a new and innovative series of handheld commercial infrared cameras. Focus is on some usability methods and techniques that I found effective and attractive to use within an industrial project's limited resources and time frame.

The Role of HCI Research Across the Diverse IBM Business
Noi Sukavariya and John Karat, IBM T.J. Watson Research Centre, U.S.A.

IBM is a diverse company consisting of software, hardware and services businesses. The Research Division – roughly 1% of the workforce – serves a dual mission of advancing science and technology, and also providing value to the various business components. In this presentation, we will discuss the basic model of how IBM sees Research interacting with

Business units, and provide some examples of how HCI-oriented researchers contribute to the success of the Research Division.

Broadening the Scope of Usability

Nigel Bevan, Professional Usability Services, United Kingdom

The popular ISO definition of usability in terms of user performance and satisfaction has recently been criticized as too narrow. The presentation will explain how practitioners can broaden the concept of usability to incorporate design for, and evaluation of: User experience, flexibility, accessibility, risk reduction and consideration of a wider range of stakeholders. The approach is based on recent proposals in ISO to extend the definition of usability.

Usability, User-Centred Design and Agile Development
Session chair:
Thursday 13.30 – 15.00   **Hall C**

User Centred & Agile Development

Joakim Lööv, Frontwalker/IT-arkitekterna, Sweden

Agile development processes are gaining ground rapidly. Finding a suitable way of combining such processes with a user-centred approach is essential in developing highly usable systems. This presentation will give an outline of such a combination, exemplified using Scrum.

Usability? Sure – Add it to the Backlog

Magnus Lif, Torsten Sandbäck & Johannes Bäckström, Guide Redina AB. Sweden

Scrum is a widely used agile development method. The method has several advantages but do not give enough guidance on how to ensure a great user experience. The authors, all usability professionals, will share experiences from working with usability in Scrum projects. Potential problems will be highlighted and a way forward will be proposed.

HCI, Design and Market Values
Session chair: Jan Gulliksen
Thursday 15.30 – 16.30   **Hall C**

Concept Designer

Olle Torgny, Antrop, Sweden

This talk will be about the encounter between usability and marketing strategy, how to use usability for getting real insights about people's behaviour and needs and how market and communication strategy can help define your product's values and the reason people use it, as a complement to how they do it. Personas are used in both worlds – the trick is how to put them to work.

IxD Strategy – How to Focus on Real Value

Per Axbom, XLENT Business Integration, Sweden

How do you prioritize interaction design when boundaries are set by time, money and resources? This presentation will help you decide what darlings to kill first, see ROI as a guiding factor and give insights into techniques for splitting a project into high-performance nuggets.

Excellent Design – It's Not About the Process, But the People, the Culture and the Leadership

Sofia Svanteson, Ocean Observations, Sweden

What do Shakespeare's plays, Michelangelo's sculptures, Pixar's animated movies, Bob Dylan's songs, Sony's broadcast system and Apple's digital revolution have in common? - One individual with a passionate vision, penetrating insight, a brilliant mind and a relentless determination and focus. This presentation will discuss the importance of respect for design among executives, how getting stuck in processes can kill creativity and how proactivity, an open mind and a creative culture can allow for a business to flourish.

Friday, August 28

Panel	
8.30 – 10.30	Auditorium

Demarcating User Experience

Moderator:Virpi Roto

Panelists: Nigel Bevan, Jettie Hoonhout, Kristina Höök, Ilpo Koskinen, Gitte Lindgaard

Multimodal Interfaces 1	
Session chair: Stefano Levialdo	
8.30 – 10.30 Paper session	Hall B

Ambiguous Keyboards and Scanning: The Relevance of the Cell Selection Phase (S)

Julio Miró-Borrás, Pablo Bernabeu-Soler, Raul Llinares and Jorge Igual

Force Feedback Magnitude Effects on User's Performance During Target Acquisition: a Pilot Study (S)

Lode Vanacken, Joan De Boeck and Karin Coninx

Gaze-Assisted Pointing for Wall-Sized Displays (S)

Hans-Joachim Bieg, Lewis L. Chuang and Harald Reiterer

Hand Pointing Accuracy for Vision-Based Interactive Systems (S)

Kelvin Cheng and Masahiro Takatsuka

Pen-Based Video Annotations: A Proposal and a Prototype for a Tablet PC (S)

Diogo Cabral and Nuno Correia

Human Perception of Near-Duplicate Videos (S)

Rodrigo de Oliveira, Mauro Cherubini and Nuria Oliver

Affective HCI and Emotion	
Session chair: Alex Olwal	
8.30 – 10.30 Paper session	Hall C

The Attractiveness Stereotype in the Evaluation of ECA's (F)

Rabia Khan and Antonella De Angeli

Interpreting Human and Avatar Facial Expressions in Context (F)

Sylvie Noel, Sarah Dumoulin and Gitte Lindgaard

Emotional Bandwidth: Information Theory Analysis of Affective Response Ratings Using a Continuous Slider (S)

Danielle Lottridge and Mark Chignell

The 'Joy-of-Use'-Button: Recording Pleasant Moments While Using a PC (S)

Robert Schleicher and Sandra Trösterer

Can You Be Persuaded? Individual Differences in Susceptibility to Persuasion (S)

Maurits Kaptein, Panos Markopoulos, Boris de Ruyter and Emile Aarts

The Subjective and Objective Nature of Website Aesthetic Impressions (S)

Eleftherios Papachristos and Nikolaos Avouris

<table>
<tr><td align="center">**Evaluation 2**
Session chair: Raquel Oliveira Prates</td></tr>
<tr><td>**8.30 – 10.30 Paper session**   **Room K4**</td></tr>
</table>

Multi-Format Notifications for Multi-Tasking (F)

Julie Weber, Mark Newman and Martha Pollack

Improving Seamless and Continuous Operations in Pen-Based Systems (F)

Chuanyi Liu and Xiangshi Ren

Insight Into Goal-Directed Movements: Beyond Fitts' Law (F)

Karin Nieuwenhuizen, Dzmitry Aliakseyeu and Jean-Bernard Martens

A Model to Simulate Web Users' Eye Movements (F)

Myriam Chanceaux, Anne Guérin-Dugué, Benoît Lemaire and Thierry Baccino

<table>
<tr><td align="center">**Interaction with Small and Large Displays 2**
Session chair: Gary Marsden</td></tr>
<tr><td>**8.30 – 10.30 Paper session**   **Room K3**</td></tr>
</table>

Spatial Cues in Small Screen Devices – Benefit or Handicap? (F)

Martina Ziefle

3DKey: An Accordion-Folding Based Virtual Keyboard for Small Screen (F)

Khaldoun Al Faraj, Nadine Vigouroux and Mustapha Mojahid

Investigating Temporal-Spatial Characteristics of Mouse and Touch Input (F)

Christian Mueller-Tomfelde

Adaptive Pointing – Design and Evaluation of a Precision Enhancing Technique for Absolute Pointing Devices (F)

Werner A. König, Jens Gerken, Stefan Dierdorf and Harald Reiterer

Games, Fun and Aesthetic Design 1
Session chair: Nicholas Graham
8.30 – 10.30 Paper session   **Room K1**

Balancing Skills to Optimize Fun in Board Games (F)

Eva Kraaijenbrink, Frank van Gils, Quan Cheng, Robert van Herk and Elise van der Hoven

For Your Eyes Only: Controlling 3D Online Games by Eye-Gaze (F)

Howell Istance, Aulikki Hyrskykari, Stephen Vickers and Thiago Chaves

Situating Productive Play: Online Gaming Practices and Guanxi in China (F)

Silvia Lindtner, Scott Mainwaring, Paul Dourish and Yang Wang

Accessibility 1
Session chair: Ebba Hvannberg
11.00 – 12.30 Paper session   **Auditorium**

DTorial: An Interactive Tutorial Framework for Blind Users in a Web 2.0 World (F)

Joshua Hailpern, Loretta Guarino Reid and Richard Boardman

The Attentive Hearing Aid: Eye Selection of Auditory Sources for Hearing Impaired Users (F)

Jamie Hart, Dumitru Onceanu, Changuk Sohn, Doug Wightman and Roel Vertegaal

Video Gaming for Blind Learners School Integration in Science Classes (F)

Jaime Sanchez and Mauricio Saenz

Multimodal Interfaces 2
Session chair: Martin Brynskov
11.00 – 12.30 Paper session   **Hall B**

PressureMove: Pressure Input with Mouse Movement (F)
Kang Shi, Pourang Irani and Sriram Subramanian

Bimanual Interaction with Interscopic Multi-Touch Surfaces (F)
Johannes Schöning, Frank Steinicke, Antonio Krüger and Klaus Hinrichs

Multimodal Media Center Interface Based on Speech, Gestures and Haptic Feedback (S)
Markku Turunen, Jaakko Hakulinen, Juho Hella, Juha-Pekka Rajaniemi, Aleksi Melto, Erno Mäkinen, Jussi Rantala, Tomi Heimonen, Tuuli Laivo, Hannu Soronen, Mervi Hansen, Pellervo Valkama, Toni Miettinen and Roope Raisamo

Comparing Gestures and Traditional Interaction Modalities on Large Displays (S)
António Neto and Carlos Duarte

Model-Based Design of Interactive Systems
Session chair: Philippe Palanque
11.00 – 12.30 Paper session   **Hall C**

Augmented Interactions: A Framework for Adding Expressive Power to Standard GUI Widgets (F)

Jared Cechanowicz and Carl Gutwin

Model-based Design of Multi-Device Applications Based on Web Services (F)

Fabio Paternò, Carmen Santoro and Lucio Davide Spano

Speed-Accuracy Tradeoff in Trajectory-Based Tasks with Temporal Constraint (F)

Xiaolei Zhou, Xiang Cao and Xiangshi Ren

Social Media/Social Networks
Session chair: Sylvie Noël
11.00 – 12.30 Paper session   **Room K4**

HoneyComb : Visual Analysis of Large Scale Social Networks (F)

Frank van Ham, Hans-Jörg Schultz and Joan Dimicco

Simulating Social Networks of Online Communities: Simulation as a Method for Sociability Design (F)

Chee Siang Ang and Panayiotis Zaphiris

A Situated Display for Local Community Participation: The Design and Use of Nnub (S)

Fiona Redhead and Brereton Margot

WidSets: A Usability Study of Widget Sharing (S)

Kristiina Karvonen, Theofanis Kilinkaridis and Olli Immonen

Games, Fun and Aesthetic Design 2
Session chair: Torkil Clemmensen
11.00 – 12.30 Paper session   **Room K3**

Head Tracking in First-Person Games: Increasing Enjoyment Using Web-Cameras (F)
Torben Sko and Henry Gardner

Playability: How to Identify the Player Experience in a Video Game (S)
José Luis González Sánchez, Natalia Padilla Zea and Francisco Luis Gutiérrez Vela

SimCompany: An Educational Game Created Through a Human-Work Interaction Design Approach (S)
Pedro Campos and Ana Campos

Accessibility 2
Session chair: Gerhard Weber
13.30 – 15.00 Paper session   **Auditorium**

Speech-Based Navigation: Improving Grid-Based Solutions (F)

Shaojian Zhu, Yao Ma, Jinjuan Feng and Andrew Sears

Useful, Social and Enjoyable: Mobile Phone Adoption by Older People (F)

Mario Conci, Fabio Pianesi and Massimo Zancanaro

Information Seeking Characteristics of Low and High Literacy Users (S)

Neesha Kodagoda, William Wong and Nawaz Kahan

'I have Something to Say': Supporting Aphasics for Organizing and Sharing Personal Experiences by Photos (S)

Abdullah Al Mahmud and Jean-Bernard Martens

Multimodal Interfaces 3
Session chair: Antonella di Angeli
13.30 – 15.00 Paper session   **Hall B**

Bodily Explorations in Space: Social Experience of a Multimodal Art Installation (F)

Giulio Jacucci, Anna Spagnolli, Alessandro Chalambalakis, Lassi Liikkanen, Stefano Roveda and Ann Morrison

Advanced Maintenance Simulation by Means of Hand-Based Haptic Interfaces (F)

Michele Nappi, Luca Paolino, Stefano Ricciardi, Monica Sebillo and Giuliana Vitiello

Multimodal Interaction within Ambient Environments: An Exploratory Study (S)

Yacine Bellik, Issam Rebaï, Edyta Machrouh, Yasmin Barzaj, Christophe Jacquet, Gaëtan Pruvost and Jean-Paul Sansonnet

Multimodal Interaction: Intuitive, Robust, and Preferred? (S)

Anja Naumann, Ina Wechsung and Jörn Hurtienne

Tangible User Interfaces and Robotics
Session chair: Lars Oestreicher
13.30 – 15.00 Paper session   **Hall C**

A Model for Steering With Haptic-Force Guidance (F)

Xing-Dong Yang, Pourang Irani, Pierre Boulanger and Walter Bischof

Designing Laser Gesture Interface for Robot Control (F)

Kentaro Ishii, Shengdong Zhao, Masahiko Inami, Takeo Igarashi and Michita Imai

A Haptic-Enhanced System for Molecular Sensing (S)

Davide Mazza and Sara Comai

Special Interest Group (SIG)

13.30 – 15.00   **Room K4**

Postgraduate Studies in the Field of HCI

Teija Vainio, Veikko Surakka, Roope Raisamo, Kari-Jouko Räihä, Poika Isokoski, Kaisa Väänänen-Vainio-Mattila and Sari Kujala

Visualisation Techniques
Session chair: Horst Oberquelle

13.30 – 15.00 Paper session   **Room K3**

WIPDash: Work Item and People Tracking Dashboard for Software Development Teams (F)

Mikkel Jakobsen, Roland Fernandez, Mary Czerwinski, Kori Inkpen, Olga Kulyk and George Robertson

CGD – A New Algorithm to Optimize Space Occupation in Ellimaps (F)

Benoit Otjacques, Mael Cornil, Monique Noirhomme and Fernand Feltz

The Visual Perception of Tag Clouds – Results from an Eyetracking Study (F)

Johann Schrammel, Stephanie Deutsch and Manfred Tscheligi

Closing Keynote
Session chair: Paula Kotzé

15.30 – 16.30   **Auditorium**

Towards Human-Centred Design

Liam Bannon, University of Limerick, Ireland

Keynote Abstract on page 48.

Conference Closing
Jan Gulliksen, Lars Oestreicher and Joaquim Jorge

16.30 – 17.00   **Auditorium**

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Keynote Abstracts

Mobile Life – Innovation in the Wild
Kristina Höök

Abstract.

After a decade of work in our research labs on mobile and ubiquitous technology, often formed by the early visions of ubiquitous computing, with the urge to move interaction from the desktop out into the wild, these technologies have now moved out into the world – into the wild. We are in the middle of a second IT-revolution, caused by the spread of mobile and ubiquitous services, in combination with a broad consumer-oriented market pull. The first IT-revolution, the introduction and deployment of Internet and the World Wide Web during the 1990's, had a major impact on all parts of our society. As mobile, ubiquitous technology now becomes wide-spread, the design and evaluation of mobile services – i.e. information technology that can be accessed and used in virtually any setting – represents an important business arena for the IT- and telecom industry. Together we have to look for a sustainable web of work, leisure and ubiquitous technology we can call the mobile life.

But what impact does this have on HCI research? In particular, what is our role in innovating new services, new technologies, new interaction models and new ways of living with this technology? Obviously, new methods for design and evaluation of interfaces are needed, especially when those interfaces are not always clearly 'interfaces' anymore, but blend in with various new materials in our environments or even worn on our bodies. Usage situations are shifting, unstable, mobile settings – interaction in the wild. There is a need for design methods that help structure a multitude of different sources of inspiration and fieldwork, and synthesize it into concrete requirements and service or technology concepts. In our work we have used a variety of such methods, such as ethnography as a basis for design, Laban-notation to analyse body behaviours, novel forms of quick sketching of mobile service interaction, cultural probes to understand emotional processes in people's everyday lives, bodystorming for situating ideas in the real world, and the experience clip method for user self-evaluation to evaluate mobile services in their realistic setting. We have also developed our own methods, such as e.g. user-driven innovation - studying extreme or specialised user groups and then innovating services for other user groups based on those experiences

But we also see trends that will turn these ways of approaching innovation upside down. Producers and consumers blend together in what we name Mobile 2.0-services, creating content dependent on the mobile setting. Sketching in hardware and software combinations becomes accessible not only to technology experts, but to all. How can HCI-practice change to make the 'digital materials' accessible to all rather than supporting only HCI-experts to develop innovative design?

As pointed out in the vision "Being Human: Human-Computer Interaction in the year 2020", HCI needs to orient towards the values shaped by the interaction between technology and people in our everyday lives. As digital, interactive technology enters every aspect of our lives we must do justice to the full complexity of actual human lived experience, where people actively and individually construct meaningful experiences around technology. We might even have to take responsibility for how society is shaped by this second digital revolution - making values such as privacy, autonomy or trust, but also living a good, rich life, explicitly part of our design processes and study methods, creating for a sustainable, human-friendly society.

In the Mobile Life centre, we work around a vision of a ludic society where work mixes with leisure, private with public – a society where enjoyment, experience and play are adopted into all aspects of life. It becomes important to recognise that private and leisure life should not have to be as polished and efficient as your work performance when practices and technology travel between these spheres of our life.

In my talk, I will discuss the implications for academic research in HCI as well as how this fosters a novel work practice in industry. The ICT and telecom industry will be less focused on identifying needs and more focused on values, in particular, ludic aspects of life.

Lies, Damn Lies and Privacy
Nicklas Lundblad

Abstract

The relationship between privacy and human computer interaction is fairly well understood. That there is such a relation is hopefully no longer in question, and there are a number of different research projects investigating the nature of the relationship in-depth. One basic assumption in some of these efforts seems to be that we can derive a number of design criteria from looking at privacy requirements and perhaps even legislation, that we then need to respect these and limit the design space that is open to systems designers in order to preserve or protect privacy.

The legal set of requirements then basically works as a framework within which design solutions need to be chosen. I would submit that this is a thoroughly erroneous way to think about the relationship between privacy and HCI, and that it assumes that one part in this deeply dynamic relationship is static. The idea of privacy is changing rapidly as an effect of design choices already made, and not even law with its considerable inertia is immune to the constant re-negotiation that is permeating the understanding of privacy in our society. Privacy no longer defines the set of possible design solutions. In fact, with the rise of social computing the relationship has almost become reversed. As computer systems morph into identity producing systems maintaining and supporting both identity formation and compartmentalization, the design of these systems shape the different forms of privacy available to us. The question should no longer be how we design privacy into our computer systems, but rather how we design identity with our computer systems.

The term identity management is on several levels a misnomer. Social technologies do not manage identities but produce and enable them. Much as producers and consumers are turning into Benklerian prosumers we see identity production and privacy protection turn into what we for lack of a better term will call (ugh!) identacy prodection, the mutual production and protection of a continuous spectrum of identities in different contexts.

This new practice is the simultaneous production of identity and protection of privacy: by divulging information on the internet users are surrounding themselves with clusters of probable but mutually incoherent propositions about them. This new Nietzschean privacy paradigm where we "speak much to hide ourselves" offers what I believe could be interesting new challenges for HCI-research.

I will attempt to argue that some of these challenges have to do with enabling "social lying". By building lie-amplifying technologies and user interfaces and systems that support and strengthen lies we can support this strategy and turn from a tinkering practice into a systems feature. Lie-amplification technologies necessitate looking closely at the social practice of lying and how it is organized. The crucial thing is to enable lying that is not trust-erosive, but privacy conducive. This is no mean task and will require lots of thoughts about how lies can be used to provide privacy effects that can go beyond what we can produce today.

In addition to this I think we need to understand trivial anonymity and how this form of context can be revived on the internet. Trivial anonymity is the kind of anonymity we enjoy in situations where no-one knows us or cares about us: in a shop, on the train or on a flight. The thin identity-like veneers we need in these situations provide even better anonymity than if we were, say, flying in masks. One reason behind this is that we tend to forget these encounters quickly, and that they leave us with little or no impression that we can use. If we could replicate this trivial anonymity on the web, ensuring that users do not need to signal that they are making conscious efforts to be anonymous, much would be gained. Otherwise the signalling effects of using, say encryption, enable traffic analysis and have privacy eroding effects on their own.

Towards Human-Centred Design
### Liam J. Bannon

Abstract.

The field of HCI has evolved and expanded dramatically since its origin in the early 1980's. The HCI community embraces a large community of researchers and practitioners around the world, from a variety of disciplinary backgrounds in the human and social sciences, engineering and informatics, and more recently, the arts and design disciplines. This kaleidoscope of cultures and disciplines as seen at INTERACT Conferences provides a rich pool of resources for examining our field. Applications are increasingly exploring our full range of sensory modalities, and merging the digital and physical worlds. WiFi has opened up a huge design space for mobile applications. A focus on usability of products and services has been complemented by an emphasis on engagement, enjoyment and experience. With the advent of ubiquitous computing, and the emergence of "The Internet of Things", new kinds of more open infrastructures make possible radically new kinds of applications. The sources of innovation have also broadened, to include human and social actors outside of the computing and design organizations. The question is to what extent is our mainstream thinking in the HCI field ready for the challenges of this Brave New World? Do the technological and social innovations that we see emerging require us to re-shape, or even, re-create, our field, or is it a case of a more gradual evolution and development of that which we already know?

In this closing Keynote, I will provide a perspective on the evolution and development of the HCI field, looking backwards as well as forwards, in order to determine what are some of the changes of significance in the field. This "broad-brush" approach to what I term " human-centred design" will be complemented by the examination of specific projects and applications, to help anchor some of the discussion. Areas such as user-centred design, participatory design, computer-supported cooperative work and learning, and interaction design, in which I have had some involvement over the years, will be mentioned. I will discuss the themes of "ecologies of artefacts", appropriation, tinkering/bricolage, and the emergence of design anthropology, among other topics. The purpose of the talk is not to engage in a form of Futurism concerning the HCI field, but to examine some of the technical and social trends that can be observed, and to highlight some areas of particular significance that warrant further attention. I argue for a multi-layered approach that, while exploring new avenues of research concerning people's use of technology, does not necessarily dismiss the corpus of knowledge we have built up over the years concerning human-computer interaction. From a personal perspective, issues such as means and ends, our underlying values, and concern for our fellow human beings in an increasingly fragile world, are issues that, while perhaps seen as outside the remit of a narrow HCI brief, impact on the field in significant ways. In this regard, discussions of our future should not be the preserve of techno-determinists, but be open to all. For example, ubiquitous computing can be involved in many

scenarios, not only that of "Ambient Intelligence". We need to engage in the development and critique of these different perspectives and approaches. Being able to work in and with multidisciplinary teams embodying distint, and at times conflicting perspectives, being able to communicate ones ideas and information across a variety of social and institutional boundaries, will become of great importance.

Of particular concern, in the context of an IFIP INTERACT event, is the need to balance the heterogeneity of concepts and methods being used in research and practice with some form of quality control. Despite the heterogeneity of perspectives and disciplines nowadays involved in the field, I will argue that the HCI community, as a community, still does have a significant role to play in the development and evolution of useful, usable and enaging ICT-enabled infrastructures and applications.

MAPS

Uppsala

Map is also found on
www.uppsalatourism.se
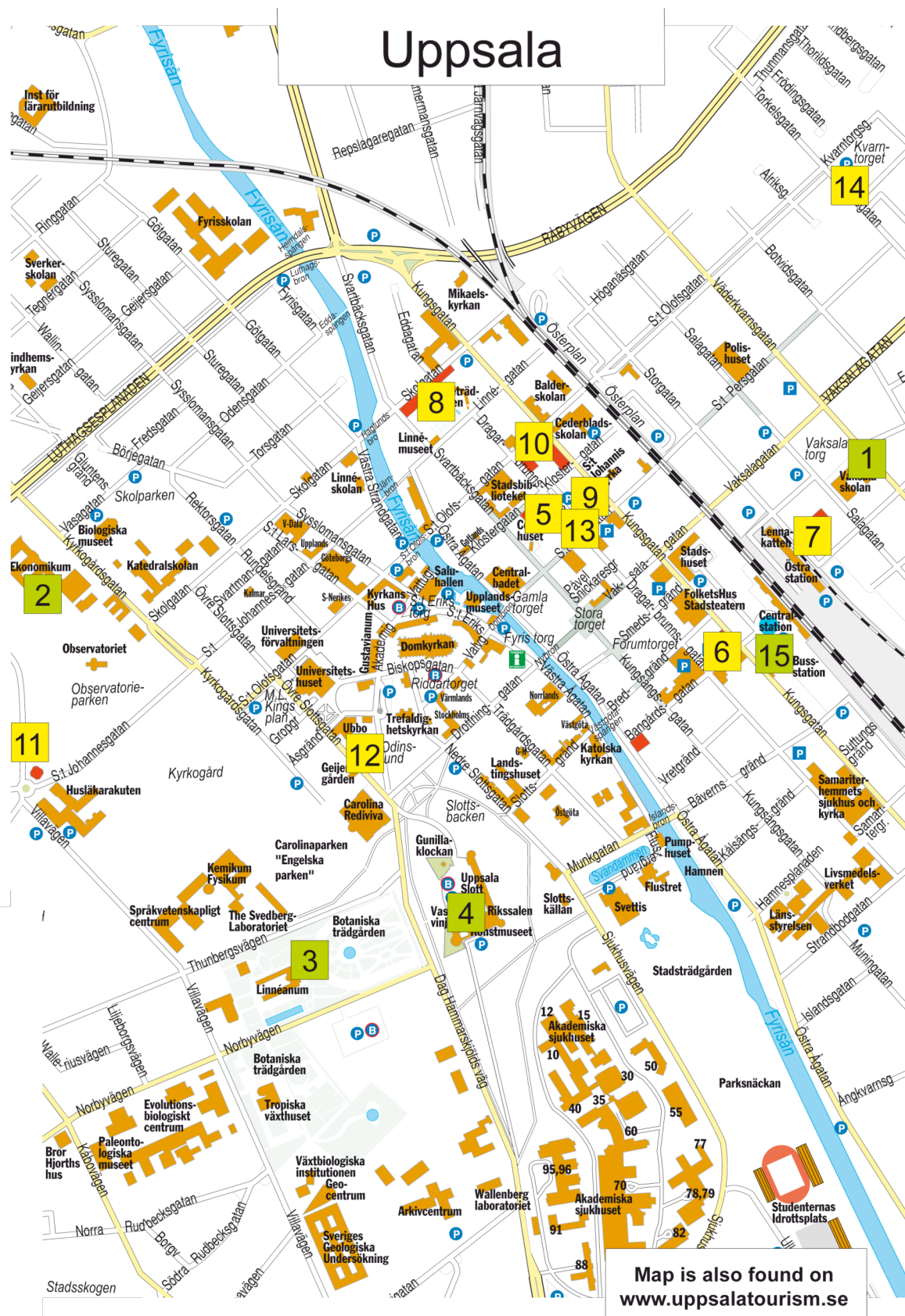
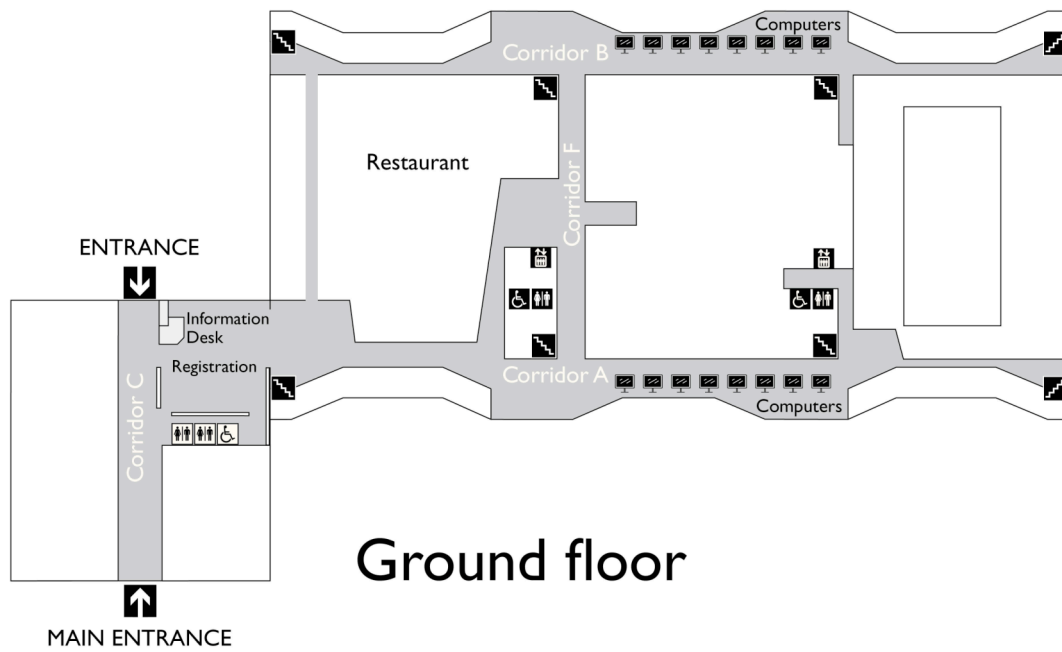## Map Legend INTERACT 2009

Conference Venue

1. **Uppsala Concert & Congress Hall,** *Vaksala torg 1*, Conference venue 26-28 August, INTERACT 2009 Conference

2. **Centre for Economic Studies** ("Ekonomikum") *Kyrkogårdsgatan 10*, Conference venue 24-25 August, Pre conference: Tutorials, Workshops

3. Botanical Garden *Villavägen 8,* Welcome Reception, August 26

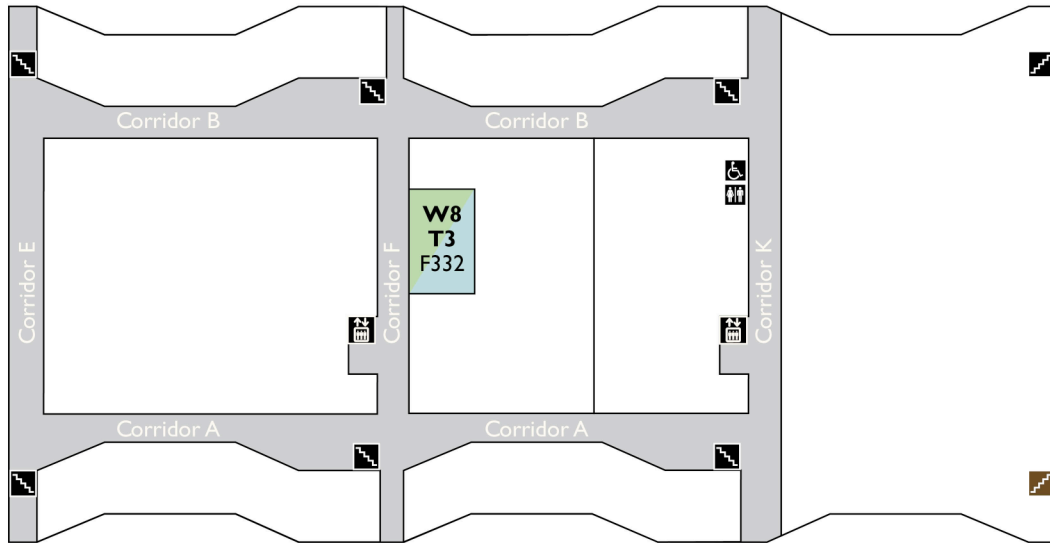**4. Uppsala Castle** ("Uppsala slott") Conference Dinner August 27

Hotels

5. Clarion Hotel Gillet e-mail: cl.uppsala@choice.se, www.clarionhotelgillet.se

6. Best Western Hotel Svava e-mail: info@hotelsvava.se, www.hotelsvava.com

7. Hotel Park Inn Rezidor SAS e-mail: info.uppsala@rezidorparkinn.com, www.uppsala.parkinn.se

8. First Hotel Linné e-mail: linne@firsthotels.se, www.firsthotels.com/linne

9. Scandic Hotel Uplandia e-mail: uplandia@scandic-hotels.com

10. Hotel Uppsala, Kungsgatan 27 e-mail: hoteluppsala@profilhotels.se, www.profilhotels.se

11. Hotell Muttern, S:t Johannesgatan 31C e-mail: muttern@hotellmuttern.se, www.hotellmuttern.se

12. Akademihotellet, Övre Slottsgatan 5A e-mail: info@akademihotellet.uu.se, www.akademihotellet.se

13. Uppsala City Hostel, S:t Persgatan 16 e-mail: stpersgatan@uppsalavandrarhem.se , www.uppsalavandrarhem.se

14. Uppsala City Hostel & Hotel, Kvarntorget 3 e-mail: kvarntorget@uppsalavandrarhem.se , www.uppsalavandrarhem.se
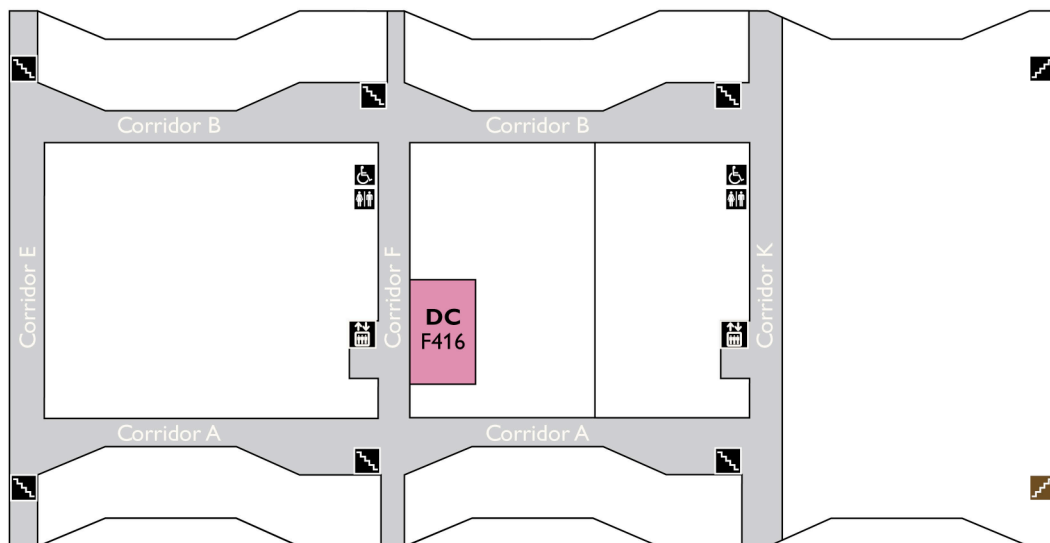
Other spots of interest

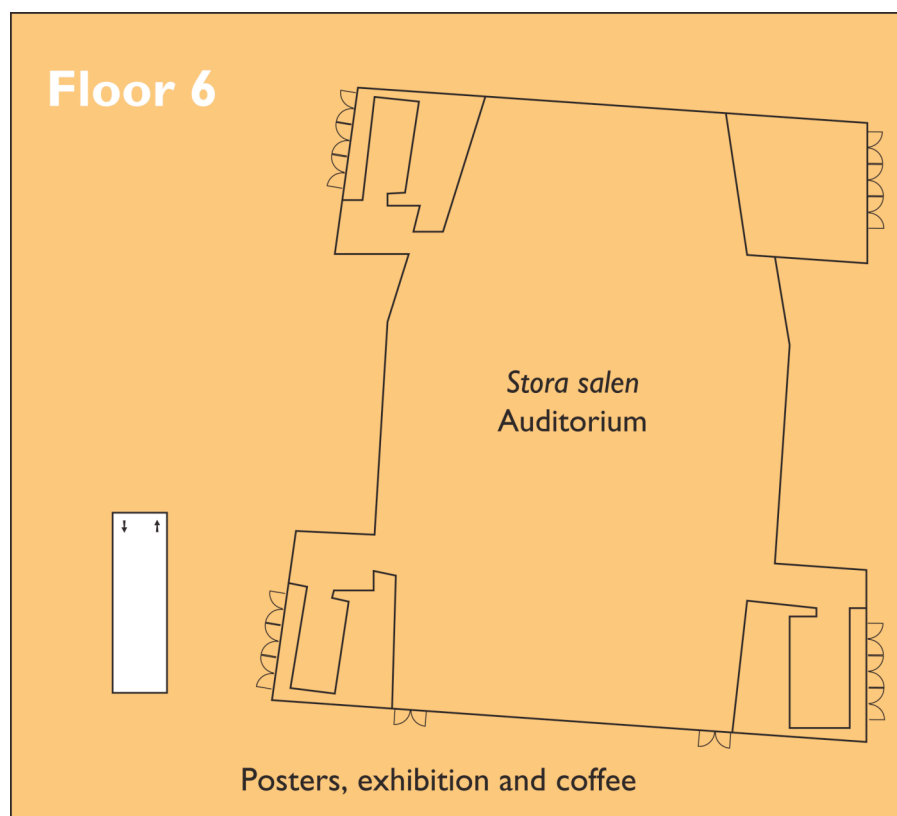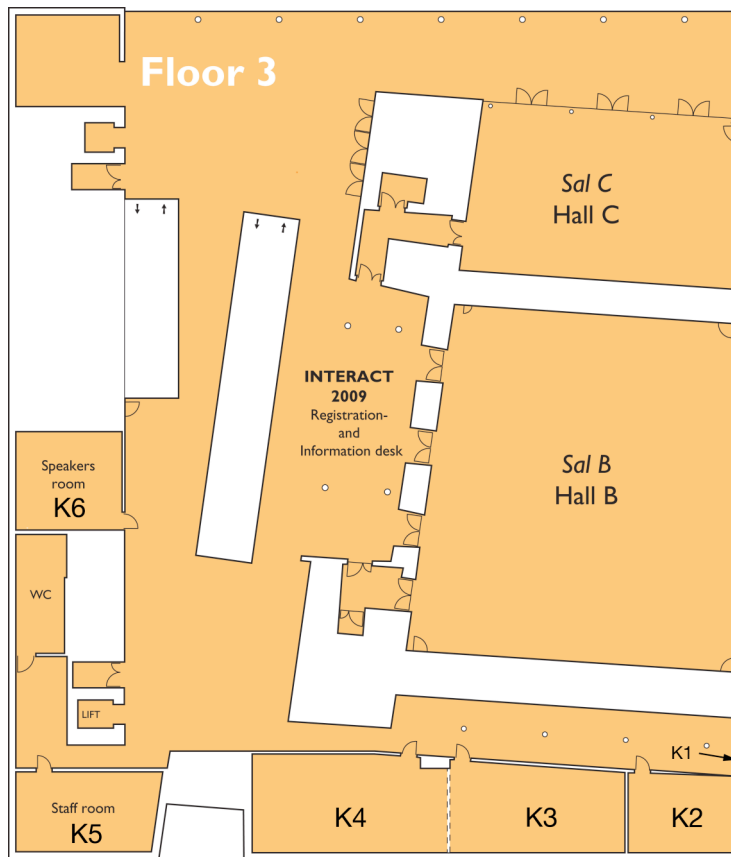**15. Uppsala Central station** Trains and buses, also bus 801 to/from Stockholm-Arlanda International Airport

Computers

Corridor B

Restaurant

Corridor F

ENTRANCE

Information
Desk

Registration

Corridor C

Corridor A

Computers

Ground floor

MAIN ENTRANCE

T1/W13
B105

W2
B113

W6/W14
B139

W4/W10
B153

W7/W12
B159

Corridor B

Corridor B

Corridor E

Corridor F

Corridor K

Goods

Corridor A

Corridor A

T2/T4
A122

W1
A138

W3/W9
A144

W5/W11
A156

Lower floor

3rd floor

4th floor

Floor 3

Sal C
Hall C

INTERACT
2009
Registration-
and
Information desk

Sal B
Hall B

Speakers
room
K6

WC

LIFT

K1

Staff room
K5

K4

K3

K2

Floor 6

Stora salen
Auditorium

Posters, exhibition and coffee

Participant's Notes