Contents – Part I

Accessibility

Assisted Interaction Data Analysis of Web-Based User Studies .......................... 1
   Xabier Valencia, J. Eduardo Pérez, Unai Muñoz, Myriam Arrue, and Julio Abascal

Technology Acceptance Evaluation by Deaf Students Considering the Inclusive Education Context .................................................. 20
   Soraia Silva Prietch and Lucia Vilela Leite Filgueiras

Understanding Touch and Motion Gestures for Blind People on Mobile Devices ................................................................. 38
   Marco Romano, Andrea Bellucci, and Ignacio Aedo

Virtual Buttons for Eyes-Free Interaction: A Study ............................................. 47
   Jens Bauer and Achim Ebert

Accessible Interfaces for Blind People

Comparing Concurrent and Retrospective Verbal Protocols for Blind and Sighted Users .................................................................. 55
   Andreas Savva, Helen Petrie, and Christopher Power

Exploring Map Orientation with Interactive Audio-Tactile Maps .......................... 72
   Alistair D.N. Edwards, Nazatul Naquiah Abd Hamid, and Helen Petrie

Inclusive Production of Tactile Graphics ......................................................... 80
   Jens Bornschein, Denise Prescher, and Gerhard Weber

Navigation Problems in Blind-to-Blind Pedestrians Tele-assistance Navigation ......................................................................... 89
   Jan Balata, Zdenek Mikovec, and Ivo Maly

Accessible Interfaces for Older Adults

Prototyping TV and Tablet Facebook Interfaces for Older Adults .......................... 110
   José Coelho, Fábio Rito, Nuno Luz, and Carlos Duarte

Socially Networked or Isolated? Differentiating Older Adults and the Role of Tablets and Television ................................................. 129
   José Coelho and Carlos Duarte
Using Photo Diaries to Elicit User Requirements from Older Adults: A Case Study on Mobility Barriers

David Swallow, Helen Petrie, Christopher Power, and Alistair D.N. Edwards

Affective HCI and Emotions and Motivational Aspects

Design Criteria for Stimulating Emotions in Web Applications

Giulio Mori, Fabio Paternò, and Ferdinando Furci

Emotion Detection in Non-native English Speakers’ Text-Only Messages by Native and Non-native Speakers

Ari Hautasaari and Naomi Yamashita

Making Decisions About Digital Legacy with Google’s Inactive Account Manager

Raquel O. Prates, Mary Beth Rosson, and Clarisse S. de Souza

Shedding Lights on Human Values: An Approach to Engage Families with Energy Conservation

Janine Huizenga, Lara S.G. Piccolo, Meia Wippoo, Christoph Meili, and Andrew Bullen

Gamification of Online Surveys: Design Process, Case Study, and Evaluation

Johannes Harms, Stefan Biegler, Christoph Wimmer, Karin Kappel, and Thomas Grechenig

Mind the Gap! Comparing Retrospective and Concurrent Ratings of Emotion in User Experience Evaluation

Anders Bruun and Simon Ahm

Recognizing Emotions in Human Computer Interaction: Studying Stress Using Skin Conductance

Alexandros Liapis, Christos Katsanos, Dimitris Sotiropoulos, Michalis Xenos, and Nikos Karousos

LEGO Pictorial Scales for Assessing Affective Response

Mohammad Obaid, Andreas Dünser, Elena Moltchanova, Danielle Cummings, Johannes Wagner, and Christoph Bartneck

The Influence of Motivation on Emotional Experience in E-commerce

Samaneh Soleimani and Effie Lai-Chong Law

The Presenter Experience of Canvas Presentations

Leonhard Lichtschlag, Philipp Wacker, Martina Ziefle, and Jan Borchers
Using Online Reviews as Narratives to Evoke Designer’s Empathy

Christiane Grünlöh, Åke Walldius, Gerhard Hartmann, and Jan Gulliksen

Alternative Input

AirDisplay: Experimenting with Air Flow as a Communication Medium

Omar Mowafi, Mohamed Khamis, and Wael Abouelsaadat

Experiencing the Elements – User Study with Natural Material Probes

Jonna Häkkila, Yun He, and Ashley Colley

PrintPut: Resistive and Capacitive Input Widgets for Interactive 3D Prints

Jesse Burstyn, Nicholas Fellion, Paul Strohmeier, and Roel Vertegaal

ReservoirBench: An Interactive Educational Reservoir Engineering Workbench

Sowmya Somanath, Allan Rocha, Hamidreza Hamdi, Ehud Sharlin, and Mario Costa Sousa

Shape-Change for Zoomable TUIs: Opportunities and Limits of a Resizable Slider

Céline Coutrix and Cédric Masclet

Alternative Input Devices for People with Disabilities

Eyes and Keys: An Evaluation of Click Alternatives Combining Gaze and Keyboard

Ken Neth Yeoh, Christof Lutteroth, and Gerald Weber

Interactions Under the Desk: A Characterisation of Foot Movements for Input in a Seated Position

Eduardo Velloso, Jason Alexander, Andreas Bulling, and Hans Gellersen

Life in the Fast Lane: Effect of Language and Calibration Accuracy on the Speed of Text Entry by Gaze

Kari-Jouko Räihä

Interfaces for Cognitive Support

Cognitive Accessibility for Mentally Disabled Persons

Stefan Johansson, Jan Gulliksen, and Ann Lantz

Design and Evaluation of Mobile Learning Applications for Autistic Children in Pakistan

Muneeb Imtiaz Ahmad and Suleman Shahid
Exercises for German-Speaking Children with Dyslexia

Maria Rauschenberger, Silke Füchsel, Luz Rello, Clara Bayarri, and Jörg Thomaschewski

Serious Games for Cognitive Training in Ambient Assisted Living Environments – A Technology Acceptance Perspective

Jan Wittland, Philipp Brauner, and Martina Ziefe

Brain-Computer Interaction

Continuous Mental Effort Evaluation During 3D Object Manipulation Tasks Based on Brain and Physiological Signals

Dennis Wobrock, Jérémie Frey, Delphine Graeff, Jean-Baptiste de la Rivière, Julien Castet, and Fabien Lotte

Continuous Tactile Feedback for Motor-Imagery Based Brain-Computer Interaction in a Multitasking Context

Camille Jeunet, Chi Vi, Daniel Spelmezan, Bernard N’Kaoua, Fabien Lotte, and Sriram Subramanian

Towards Brain Computer Interfaces for Recreational Activities: Piloting a Drone

Nataliya Kosmyna, Franck Tarpin-Bernard, and Bertrand Rivet

Cognitive Factors

A Human Cognitive Processing Perspective in Designing E-Commerce Checkout Processes

Marios Belk, Panagiotis Germanakos, Argyris Constantinides, and George Samaras

Bilingual Reading Experiences: What They Could Be and How to Design for Them

Clément Pillias and Pierre Cubaud

Dynamic Workload Adjustments in Human-Machine Systems Based on GSR Features

Jianlong Zhou, Ju Young Jung, and Fang Chen

Text Touching Effects in Active Reading: The Impact of the Use of a Touch-Based Tablet Device

Hirohito Shibata, Kentaro Takano, and Shun’ichi Tano

Author Index
Contents – Part II

Computer-Supported Cooperative Work and Social Computing

EmbodiNet: Enriching Distributed Musical Collaboration Through Embodied Interactions ........................................ 1
*Dalia El-Shimy and Jeremy R. Cooperstock*

Preference Elicitation and Negotiation in a Group Recommender System . . . . . . 20
*Jesús Omar Álvarez Márquez and Jürgen Ziegler*

The #selfiestation: Design and Use of a Kiosk for Taking Selfies in the Enterprise ...................................................... 38
*Casey Dugan, Sven Laumer, Thomas Erickson, Wendy Kellogg, and Werner Geyer*

The LuminUs: Providing Musicians with Visual Feedback on the Gaze and Body Motion of Their Co-performers ..................... 47
*Evan Morgan, Hatice Gunes, and Nick Bryan-Kinns*

An Artifact Ecology in a Nutshell: A Distributed Cognition Perspective for Collaboration and Coordination ........................................ 55
*Christina Vasiliou, Andri Ioannou, and Panayiotis Zaphiris*

Assessing a Collaborative Application for Comic Strips Composition . . . . . . 73
*Eleonora Mencarini, Gianluca Schiavo, Alessandro Cappelletti, Oliviero Stock, and Massimo Zancanaro*

Augmenting Collaborative MOOC Video Viewing with Synchronized Textbook .......................................................... 81
*Nan Li, Łukasz Kidziński, and Pierre Dillenbourg*

EXCITE: EXploring Collaborative Interaction in Tracked Environments . . . . 89
*Nicolai Marquardt, Frederico Schardong, and Anthony Tang*

The Usefulness of Method-Resources for Evaluating a Collaborative Training Simulator ............................................. 98
*Ebba Thora Hvannberg, Gyda Halldorsdottir, and Jan Rudinsky*

End-User Development

Flat Design vs Traditional Design: Comparative Experimental Study . . . . 106
*Ivan Burmistrov, Tatiana Zlokazova, Anna Izmalkova, and Anna Leonova*
How to Organize the Annotation Systems in Human-Computer Environment: Study, Classification and Observations
Anis Kalboussi, Nizar Omheni, Omar Mazhoud, and Ahmed Hadj Kacem

Mini-Orb: A Personal Indoor Climate Preference Feedback Interface
Markus Rittenbruch, Jared Donovan, and Yasuhiro Santo

Prototyping the Self-Aauthored Video Interview: Challenges and Opportunities
Stephen Snow, Markus Rittenbruch, and Margot Brereton

Evaluation Methods/Usability Evaluation

An Empirical Study of the Effects of Three Think-Aloud Protocols on Identification of Usability Problems
Anders Bruun and Jan Stage

An Observational Study of How Experienced Programmers Annotate Program Code
Craig J. Sutherland, Andrew Luxton-Reilly, and Beryl Plimmer

Around-Device Interactions: A Usability Study of Frame Markers in Acquisition Tasks
Fernando Garcia-Sanjuan, Alejandro Catala, Geraldine Fitzpatrick, and Javier Jaen

On Applying Experience Sampling Method to A/B Testing of Mobile Applications: A Case Study
Myunghee Lee and Gerard J. Kim

Usability Aspects of the Inside-in Approach for Ancillary Search Tasks on the Web
Marco Winckler, Ricardo Cava, Eric Barboni, Philippe Palanque, and Carla Freitas

Using Affinity Diagrams to Evaluate Interactive Prototypes
Andrés Lucero

What Users Prefer and Why: A User Study on Effective Presentation Styles of Opinion Summarization
Xiaojun Yuan, Ning Sa, Grace Begany, and Huahai Yang

A Comparison of Five HSV Color Selection Interfaces for Mobile Painting Search
Min Zhang, Guoping Qiu, Natasha Alechina, and Sarah Atkinson
Computer-Related Attribution Styles: Typology and Data Collection
Methods ................................................................. 274
   Adelka Niels and Monique Janneck

Reciprocity in Rapid Ethnography: Giving Back by Making the Small Things Count ................................................................. 292
   Pieter Duysburgh and Karin Slegers

Testing the Unknown – Value of Usability Testing for Complex Professional Systems Development ................................................................. 300
   Kimmo Tarkkanen, Ville Harkke, and Pekka Reijonen

Eye Tracking
An Empirical Investigation of Gaze Selection in Mid-Air Gestural 3D Manipulation ................................................................. 315
   Eduardo Velloso, Jayson Turner, Jason Alexander, Andreas Bulling, and Hans Gellersen

Four Eyes See More Than Two: Shared Gaze in the Car ................................................................. 331
   Sandra Trösterer, Magdalena Gärtner, Martin Wuchse, Bernhard Maurer, Axel Baumgartner, Alexander Meschtscherjakov, and Manfred Tscheligi

Gaze+touch vs. Touch: What’s the Trade-off When Using Gaze to Extend Touch to Remote Displays? ................................................................. 349
   Ken Pfeuffer, Jason Alexander, and Hans Gellersen

Gesture Interaction
Gestu-Wan - An Intelligible Mid-Air Gesture Guidance System for Walk-up-and-Use Displays ................................................................. 368
   Gustavo Rovelo, Donald Degraen, Davy Vanacken, Kris Luyten, and Karin Coninx

Natural Interaction with Video Environments Using Gestures and a Mirror Image Avatar ................................................................. 387
   Christian Kray, Dennis Wilhelm, Thore Fechner, and Morin Ostkmap

Sci-Fi Gestures Catalog: Understanding the Future of Gestural Interaction ................................................................. 395
   Lucas S. Figueiredo, Mariana Pinheiro, Edvar Vilar Neto, Thiago Chaves, and Veronica Teichrieb

TV Interaction Beyond the Button Press: Exploring the Implications of Gesture, Pressure and Breath as Interaction Mechanisms for a TV User Interface ................................................................. 412
   Regina Bernhaupt, Antoine Desnos, Michael Pirker, and Daniel Schwaiger
**HCI and Security**

“I Agree”: The Effects of Embedding Terms of Service Key Points in Online User Registration Form ......................................................... 420
  Matjaž Kljun, Jernej Vičič, Klen Čopič Pucihar, and Branko Kavšek

Automatic Privacy Classification of Personal Photos ......................... 428
  Daniel Buschek, Moritz Bader, Emanuel von Zeschwitz, and Alexander De Luca

CipherCard: A Token-Based Approach Against Camera-Based Shoulder Surfing Attacks on Common Touchscreen Devices ......................... 436
  Teddy Seyed, Xing-Dong Yang, Anthony Tang, Saul Greenberg, Jiawei Gu, Bin Zhu, and Xiang Cao

Digital Signage Effectiveness in Retail Stores ................................. 455
  Mari Ervasti, Juha Häikiö, Minna Isomursu, Pekka Isomursu, and Tiina Liuska

Toward a Deeper Understanding of Data Analysis, Sensemaking, and Signature Discovery ......................................................... 463
  Sheriff Jolaoso, Russ Burtner, and Alex Endert

**HCI for Developing Regions and Social Development**

HCI Practices in the Nigerian Software Industry ............................. 479
  Abiodun Ogunyemi, David Lamas, Emmanuel Rotimi Adagunodo, and Isaías Barreto da Rosa

Penan’s Oroo’ Short Message Signs (PO-SMS): Co-design of a Digital Jungle Sign Language Application ............................................. 489
  Tariq Zaman and Heike Winschiers-Theophilus

The Whodunit Challenge: Mobilizing the Crowd in India .................. 505
  Aditya Vashista, Rajan Vaish, Edward Cutrell, and William Thies

Wayfinding Behavior in India ...................................................... 522
  Naveed Ahmed

**HCI for Education**

Evaluating Digital Tabletop Collaborative Writing in the Classroom ...... 531
  Philip Heslop, Anne Preston, Ahmed Kharrufa, Madeline Balaam, David Leat, and Patrick Olivier
Evaluating the Accuracy of Pre-kindergarten Children Multi-touch Interaction .......................................................... 549
   Vicente Nacher and Javier Jaen

The 5-Step Plan: Empowered Children’s Robotic Product Ideas ............ 557
   Lara Lammer, Astrid Weiss, and Markus Vincze

Using IMUs to Identify Supervisors on Touch Devices ...................... 565
   Ahmed Kharrufa, James Nicholson, Paul Dunphy, Steve Hodges,
   Pam Briggs, and Patrick Olivier

Design and Usability Evaluation of Adaptive e-learning Systems Based
on Learner Knowledge and Learning Style ..................................... 584
   Mohammad Alshammari, Rachid Anane, and Robert J. Hendley

How Does HCI Research Affect Education Programs?
A Study in the Brazilian Context .................................................. 592
   Isabela Gasparini, Simone Diniz Junqueira Barbosa,
   Milene Selbach Silveira, Silvia Amélia Bim, and Clodis Boscarioli

MindMiner: A Mixed-Initiative Interface for Interactive Distance Metric Learning ......................................................... 611
   Xiangmin Fan, Youming Liu, Nan Cao, Jason Hong, and Jingtao Wang

Author Index ................................................................................. 629
# Contents – Part III

## HCI for Global Software Development

An Interactive Approach for Inspecting Software System Measurements . . . . . 1  
*Taimur Khan, Henning Barthel, Karsten Amrhein, Achim Ebert, and Peter Liggesmeyer*

Non-response, Social Exclusion, and False Acceptance: Gatekeeping Tactics and Usability Work in Free-Libre Open Source Software Development 9  
*Mikko Rajanen, Netta Iivari, and Arto Lanamäki*

Task Allocation Between UX Specialists and Developers in Agile Software Development Projects 27  
*Kati Kuusinen*

## HCI in Healthcare

Breathe with Touch: A Tactile Interface for Breathing Assistance System . . . 45  
*Bin Yu, Loe Feijs, Mathias Funk, and Jun Hu*

Low-Income Parents’ Values Involving the Use of Technology for Accessing Health Information 53  
*David Muñoz and Rosa I. Arriaga*

Probing the Potential of Multimedia Artefacts to Support Communication of People with Dementia 71  
*Alina Huldtgren, Fabian Mertl, Anja Vormann, and Chris Geiger*

Smartphone-Based Gait Measurement Application for Exercise and Its Effects on the Lifestyle of Senior Citizens 80  
*Takahiro Miura, Ken-ichiro Yabu, Atsushi Hiyama, Noriko Inamura, Michitaka Hirose, and Tohru Ifukube*

## HCI Studies

Swimming the Channels: An Analysis of Online Archival Reference Enquiries 99  
*Joseph Pugh and Christopher Power*

“Not Some Trumped Up Beef”: Assessing Credibility of Online Restaurant Reviews 116  
*Marina Kobayashi, Victoria Schwanda Sosik, and David Huffaker*
An Empirical Investigation of the Practices and Challenges Specific to International User Studies
Sabine Madsen, Lene Nielsen, Heidi Hautopp, and Iben Jensen

Entity-Centric Visualization of Open Data
Sajan Raj Ojha, Mladjan Jovanovic, and Fausto Giunchiglia

Mindful Gaming: How Digital Games Can Improve Mindfulness
Jacek Sliwinski, Mary Katsikitis, and Christian Martyn Jones

The Affordances of Broken Affordances
Martin Gielsgaard Grünbaum and Jakob Grue Simonsen

Human-Robot Interaction
Deploying Robots in a Production Environment: A Study on Temporal Transitions of Workers’ Experiences
Daniela Wurhofer, Thomas Meneweger, Verena Fuchsberger, and Manfred Tscheligi

Finding Objects Faster in Dense Environments Using a Projection Augmented Robotic Arm
Hind Gacem, Gilles Bailly, James Eagan, and Eric Lecolinet

It’s Not the Way You Look, It’s How You Move: Validating a General Scheme for Robot Affective Behaviour
Jekaterina Novikova, Gang Ren, and Leon Watts

Interactive Tabletops
HoverSpace: Analyses of the Perceived Spatial Affordances of Hover Interaction Above Tabletop Surfaces
Paul Lubos, Oscar Ariza, Gerd Bruder, Florian Daiber, Frank Steinicke, and Antonio Krüger

In-Situ Occlusion Resolution for Hybrid Tabletop Environments
Jan Riemann, Mohammadreza Khalilbeigi, and Max Mühlhäuser

MovemenTable: The Design of Moving Interactive Tabletops
Kazuki Takashima, Yusuke Asari, Hitomi Yokoyama, Ehud Sharlin, and Yoshifumi Kitamura

Mobile and Ubiquitous Interaction
If You Are Happy and You Know It, Say “I’m Here”: Investigating Parents’ Location-Sharing Preferences
Paolo Massa, Chiara Leonardi, Bruno Lepri, Fabio Pianesi, and Massimo Zancanaro
Navigation in Long Forms on Smartphones: Scrolling Worse than Tabs, Menus, and Collapsible Fieldsets ..................................................... 333
   Johannes Harms, Martina Kratky, Christoph Wimmer, Karin Kappel, and Thomas Grechenig

Synchronising Live Second Screen Applications with TV Broadcasts Through User Feedback ............................................................... 341
   Pedro Centieiro, Teresa Romão, A. Eduardo Dias, and Rui Neves Madeira

UbiBeam: Exploring the Interaction Space for Home Deployed Projector-Camera Systems .............................................................. 350
   Jan Gugenheimer, Pascal Knierim, Christian Winkler, Julian Seifert, and Enrico Rukzio

Cue Now, Reflect Later: A Study of Delayed Reflection of Diary Events. . . 367
   Ming Ki Chong, Jon Whittle, Umar Rashid, and Chee Siang Ang

Tick that Box: Interactive Paper Documents ........................................ 376
   Yomna Abdelrahman, Thomas Kubitz, Katrin Wolf, Norman Pohl, and Albrecht Schmidt

Towards Deeper Understanding of User Experience with Ubiquitous Computing Systems: Systematic Literature Review and Design Framework . . 384
   Kaisa Väänänen-Vainio-Mattila, Thomas Olsson, and Jonna Häkkilä

uCCanvas: A Web Framework for Spontaneous Smartphone Interaction with Ubiquitous Displays .................................................. 402
   Tilman Dingler, Tobias Bagg, Yves Grau, Niels Henze, and Albrecht Schmidt

Wireless Smartphone Mirroring in Video Calls .................................... 410
   Henrik Sorensen, Kenton O’Hara, Phil Gosset, and Jesper Kjeldskov

Multi-screen Visualization and Large Screens

Disperse: Enabling Web-Based Visualization in Multi-screen and Multi-user Environments ......................................................... 418
   Megan Monroe and Casey Dugan

Evaluation of Distance-Aware Bimanual Manipulation Techniques for Large High-Resolution Displays ........................................ 436
   Anke Lehmann and Oliver Staadt

Should I Stay or Should I Go? Selecting Between Touch and Mid-Air Gestures for Large-Display Interaction ........................................ 455
   Mikkel R. Jakobsen, Yvonne Jansen, Sebastian Boring, and Kasper Hornbæk
Participatory Design

Funky-Design-Spaces: Interactive Environments for Creativity Inspired by Observing Designers Making Mood Boards ........................................ 474
  Andrés Lucero

Kwento: Using a Participatory Approach to Design a Family Storytelling Application for Domestic Helpers .................................................. 493
  Kakit Cheong and Alex Mitchell

Paper or Pixel? Comparing Paper- and Tool-Based Participatory Design Approaches ................................................................. 501
  Matthias Heintz, Effie Lai-Chong Law, and Samaneh Soleimani

Participatory Design in Practice: The Case of an Embroidered Technology... 518
  Laura Cortés-Rico and Giovanny Piedrahita-Solórzano

Pointing and Gesture Interaction

Better Than You Think: Head Gestures for Mid Air Input .......................... 526
  Katrin Plaumann, Jan Ehlers, Florian Geiselhart, Gabriel Yuras, Anke Huckauf, and Enrico Rukzio

Enhancing Pinch-Drag-Flick Paradigm with Two New Gestures:
Two-Finger-Tap for Tablets and Tap&Tap for Smartphones ..................... 534
  Alessio Bellino

Estimating Production Time of Touchless Hand Drawing Gestures .......... 552
  Orlando Erazo, José A. Pino, and Pedro Antunes

The Costs and Benefits of Combining Gaze and Hand Gestures for Remote Interaction ................................................................. 570
  Yanxia Zhang, Sophie Stellmach, Abigail Sellen, and Andrew Blake

Social Interaction

Sharing Wishes on Public Displays: Using Technology to Create Social Places ................................................................. 578
  Vinicius Ferreira, Junia Anacleto, and Andre Bueno

Social Interaction Design Patterns for Urban Media Architecture ............ 596
  Luke Hespanhol and Peter Dalsgaard

Thinking Like Disney: Supporting the Disney Method Using Ambient Feedback Based on Group Performance ................................. 614
  Sarah Tausch, Fabius Steinberger, and Heinrich Hußmann
Contents – Part IV

Tangible and Tactile Interaction

Child or Adult? Inferring Smartphone Users’ Age Group from Touch Measurements Alone ................................................................. 1
   Radu-Daniel Vatavu, Lisa Anthony, and Quincy Brown

Designing of 2D Illusory Tactile Feedback for Hand-Held Tablets ........ 10
   Youngsun Kim, Jaedong Lee, and Gerard J. Kim

Need for Touch in Human Space Exploration: Towards the Design of a Morphing Haptic Glove – ExoSkin ........................................... 18
   Sue Ann Seah, Marianna Obrist, Anne Roudaut, and Sriram Subramanian

Tactile Communication in Extreme Contexts: Exploring the Design Space Through Kiteboarding ............................................................ 37
   André Schmidt, Mads Kleemann, Timothy Merritt, and Ted Selker

Glass+Skin: An Empirical Evaluation of the Added Value of Finger Identification to Basic Single-Touch Interaction on Touch Screens ........ 55
   Quentin Roy, Yves Guiard, Gilles Bailly, Éric Lecolinet, and Olivier Rioul

Physical Playlist: Bringing Back the Mix-Tape .................................... 72
   Daniel Burnett, Adrian Gradinar, Joel Porter, Mike Stead, Paul Coulton, and Ian Forrester

Tangible Voting: A Technique for Interacting with Group Choices on a Tangible Tabletop .............................................................. 79
   Valérie Maquil, Eric Tobias, and Thibaud Latour

Tools for Design

Dico: A Conceptual Model to Support the Design and Evaluation of Advanced Search Features for Exploratory Search ...................... 87
   Emanuel Felipe Duarte, Edson Oliveira Jr., Filipe Roseiro Cðgo, and Roberto Pereira

Revealing Differences in Designers’ and Users’ Perspectives: A Tool-Supported Process for Visual Attention Prediction for Designing HMIs for Maritime Monitoring Tasks ...................... 105
   Sebastian Feuerstack and Bertram Wortelen
Worth-Centered Design in Practice: Lessons from Experience and Research Agenda .......................................................... 123
   Fatoumata Camara and Gaëlle Calvary

Touch and Haptic

Actuated Shear: Enabling Haptic Feedback on Rich Touch Interfaces .............. 140
   Bernhard Maurer, Roland Buchner, Martin Murer, and Manfred Tscheligi

Characterizing the Influence of Motion Parameters on Performance When Acquiring Moving Targets ........................................... 148
   Alexandre Kouyoumdjian, Nicolas Férey, Patrick Bourdot, and Stéphane Huot

Comparing Fatigue When Using Large Horizontal and Vertical Multi-touch Interaction Displays ......................................................... 156
   Shiroq Al-Megren, Ahmed Kharrufa, Jonathan Hook, Amey Holden, Selina Sutton, and Patrick Olivier

Touch, Movement and Vibration: User Perception of Vibrotactile Feedback for Touch and Mid-Air Gestures .................................................. 165
   Christian Schönaeuer, Annette Mossel, Ionuţ-Alexandru Zaiţi, and Radu-Daniel Vatavu

Where to Start? Exploring the Efficiency of Translation Movements on Multitouch Devices .............................................................. 173
   Quan Nguyen and Michael Kipp

User and Task Modelling

Enhanced Task Modelling for Systematic Identification and Explicit Representation of Human Errors ......................................................... 192
   Racim Fahssi, Célia Martinie, and Philippe Palanque

EvolutionWorks: Towards Improved Visualization of Citation Networks ...... 213
   Jason Wilkins, Jaakko Järvi, Ajit Jain, Gaurav Kejriwal, Andruid Kerne, and Vijay Gumudavelly

Quantifying Object- and Command-Oriented Interaction .......................... 231
   Alix Goguey, Julie Wagner, and Géry Casiez

Users, Bystanders and Agents: Participation Roles in Human-Agent Interaction .............................................................. 240
   Antonia L. Krummheuer
Visualization

Augmented Happiness: Simple Color Changes Influence Users’ Conceptual Choices .................................................. 248
Diana Löffler, Wolfgang Paier, Takashi Torizuka, Mio Ikeda, and Jörn Hurtienne

Investigating Representation Alternatives for Communicating Uncertainty to Non-experts .................................. 256
Miriam Greis, Thorsten Ohler, Niels Henze, and Albrecht Schmidt

Proxemic Flow: Dynamic Peripheral Floor Visualizations for Revealing and Mediating Large Surface Interactions ............... 264
Jo Vermeulen, Kris Luyten, Karin Coninx, Nicolai Marquardt, and Jon Bird

Self-Actuated Displays for Vertical Surfaces .................................................. 282
Patrick Bader, Valentin Schwind, Norman Pohl, Niels Henze, Katrin Wolf, Stefan Schneegass, and Albrecht Schmidt

Visualization 3D

3D-HUDD – Developing a Prototyping Tool for 3D Head-Up Displays ................................................................. 300
Nora Broy, Matthias Nefzger, Florian Alt, Mariam Hassib, and Albrecht Schmidt

Design and Evaluation of Mirror Interface MIOSS to Overlay Remote 3D Spaces .................................................. 319
Ryo Ishii, Shiro Ozawa, Akira Kojima, Kazuhiro Otsuka, Yuki Hayashi, and Yukiko I. Nakano

Improving Spatial Awareness for Human Trajectory Visualization in Space-Time Cubes ........................................ 327
Tiago Gonçalves, Ana Paula Afonso, and Bruno Martins

MStoryG: Exploring Serendipitous Storytelling Within High Anxiety Public Spaces .................................................. 335
Clinton Jorge, Valentina Nisi, Julian Hanna, Nuno Nunes, Miguel Caldeira, and Amanda Marinho

Visualization in Virtual Spaces

Jérémy Frey, Aurélien Appriou, Fabien Lotte, and Martin Hachet
Exploring the Use of Virtual Environments in an Industrial Site
Design Process ................................................................. 363
Ashley Colley, Jani Väyrynen, and Jonna Häkkilä

Pointing in Spatial Augmented Reality from 2D Pointing Devices .......... 381
Renaud Gervais, Jérémy Frey, and Martin Hachet

The Comparison of Performance, Efficiency, and Task Solution Strategies in Real, Virtual and Dual Reality Environments ...................... 390
Frederic Raber, Antonio Krüger, and Gerrit Kahl

Wearable Computing

Hard-to-Get-at Data from Difficult-to-Access Users ......................... 409
Bob Fields, Andy Bardill, Lisa Marzano, and Kate Herd

Oh, What a Night! Effortless Sleep Monitoring at Home .................... 417
Bert Vandenberghe and David Geerts

SkInteract: An On-body Interaction System Based on Skin-Texture Recognition ................................................................. 425
Manuel Prätorius, Aaron Scherzinger, and Klaus Hinrichs

Towards a Model of Virtual Proxemics for Wearables ....................... 433
Junia Anacleto and Sidney Fels

ZENse - Supporting Everyday Emotional Reflection ......................... 448
Christian Löw, Chalid Gad-El-Hak, Roman Ganhör, and Hilda Tellioglu

Demonstrations

BlurtLine: A Design Exploration to Support Children with ADHD in Classrooms ................................................................. 456
Dorothé Smit and Saskia Bakker

Cooperation in Real-Time Using a Virtual Environment .................... 461
Máté Köles, Károly Hercegfi, Balázs Péter Hámornik, Emma Lógó, Bálint Szabó, and Anita Komlódi

Diving into the Data Ocean ..................................................... 465
Dieter Meiller

ETA Wizard App: Make Design and Evaluation of Accessible Electronic Travel Aids Easy ............................................................. 469
Limin Zeng, Gerhard Weber, and Alexander Fickel
Generating Narratives from Personal Digital Data: Using Sentiment, Themes, and Named Entities to Construct Stories .......................... 473
   Elaine Farrow, Thomas Dickinson, and Matthew P. Aylett

Interactive Light Feedback: Illuminating Above-Device Gesture Interfaces . . . 478
   Euan Freeman, Stephen Brewster, and Vuokko Lantz

StoreAnt: A System to Support Finding Collaborative Systems Evaluation Methods ................................................................. 482
   Marcella Leandro Costa de Souza, Lidia Silva Ferreira, Raquel Oliveira Prates, and Marilí Lyra Bergamo

TUIOFX—Toolkit Support for the Development of JavaFX Applications for Interactive Tabletops ........................................... 486
   Mirko Fetter and David Bimamisa

Interactive Posters

“I Was Here”: Enabling Tourists to Leave Digital Graffiti or Marks on Historic Landmarks .......................................................... 490
   Matjaž Kljun and Klen Čopič Pucihar

A Hybrid Approach for Visualizing Spatial and Non-spatial Data Types of Embedded Systems .................................................. 495
   Ragaad AlTarawneh, Shah Rukh Humayoun, and Achim Ebert

A Multi-modal System for Public Speaking: Pilot Study on Evaluation of Real-Time Feedback .................................................... 499
   Fiona Dermody, Alistair Sutherland, and Margaret Farren

   Mina Terauchi and Yuji Nagashima

Applying “Out of Body” Vibrotactile Illusion to Two-Finger Interaction for Perception of Object Dynamics .............................. 506
   Jaedong Lee, Youngsun Kim, and Gerard J. Kim

Designing IDA - An Intelligent Driver Assistant for Smart City Parking in Singapore ................................................................. 510
   Andreea I. Niculescu, Mei Quin Lim, Seno A. Wibowo, Kheng Hui Yeo, Boon Pang Lim, Michael Popow, Dan Chia, and Rafael E. Banchs

   Antje Heinicke, Christina Bröhl, Ioannis Dokas, Katrin Walbaum, Jennifer Bützler, and Christopher Schlick
Digital Co-design Applied to Healthcare Environments:
A Comparative Study .............................................................. 518
Lei Shi, James MacKrill, Elisavet Dimitrokali, Carolyn Dawson,
and Rebecca Cain

Dual Camera Magic Lens for Handheld AR Sketching ................. 523
Klen Ćopič Pucihar, Jens Grubert, and Matjaž Kljun

Enabling Naturalness and Humanness in Mobile Voice Assistants .... 528
Sanjay Ghosh and Jatin Pherwani

Estimation of Radius of Curvature of Lumbar Spine Using Bending Sensor for Low Back Pain Prevention ....................... 533
Takakuni Iituka, Kyoko Shibata, and Yoshio Inoue

Evaluation of Dispatcher Requirements on Automated Customer Feedback in Public Transport ............................................. 537
Cindy Mayas, Stephan Hörold, Anselmo Stelzer, Frank Englert,
and Heidi Krömker

Experiences of Teaching HCI to a Multidisciplinary Cohort of Computing and Design Students ........................................... 542
Omar Mubin, Abdullah Al Mahmud, and Suleman Shahid

Experiencing a Home Energy Management System: Finding Opportunities for Design ..................................................... 546
Bingxin Ni, Abdullah Al Mahmud, and David V. Keyson

Eye Strain from Switching Focus in Optical See-Through Displays ........ 550
Jaeun Yu and Gerard J. Kim

First Impression Matters: Exploring the Mediating Effect of Previous Experience on the Perception of Beauty and Usability ........... 555
Suleman Shahid and Omar Mubin

Informing Customers via Interactive Shelves .............................. 559
Peter Rogelj

Intelligent Ankle-Foot Orthosis by Energy Regeneration for Controllable Damping During Gait in Real Time. .......................... 563
Kyoko Shibata, Yoshio Inoue, and Hironobu Satoh

Interactive Check System for Facilitating Self-awareness of Dorm Students in Upper Secondary Education .......................... 569
Shigenori Akamatsu, Masanobu Yoshida, Hironobu Satoh,
and Takumi Yamaguchi
Interactive Toys in the Home: A Parents Perspective

Omar Mubin, Duncan Rutishauser, Mauricio Novoa, Derek Wainohu, and Suleman Shahid

Learning Lessons from Controlled Studies to Investigate Users’ Resilience Strategies

Jonathan Day, George Buchanan, and Stephann Makri

LightWatch: A Wearable Light Display for Personal Exertion.

Jutta Fortmann, Janko Timmermann, Bengt Lüers, Marius Wybrands, Wilko Heuten, and Susanne Boll

Perceptive Media – Adaptive Storytelling for Digital Broadcast

Adrian Gradinar, Daniel Burnett, Paul Coulton, Ian Forrester, Matt Watkins, Tom Scutt, and Emma Murphy

Redesigning Interaction in CODES

Elisa Leo de Oliveira, Evandro Manara Miletto, and Luciano Vargas Flores

Small Community Size of Private SNS for Bonding Relationship: Development of a Research Framework

Hyeonjung Ahn and Sangwon Lee

Sushi Train Interface: Passive and Interactive Information Sharing

Tomomi Takashina and Yuji Kokumai

Tangible Microscope with Intuitive Stage Control Interface

Tomomi Takashina, Hitoshi Kawai, and Yuji Kokumai

Touch Skin: Proprioceptive Input for Small Screen Devices

Changhyeon Lee, Jaedong Lee, and Gerard J. Kim

Towards In-Air Gesture Control of Household Appliances with Limited Displays

Euan Freeman, Stephen Brewster, and Vuokko Lantz

Video-Conferencing in E-commerce Website: Effect on Perceived Service Quality and Trust

Suleman Shahid, Abdullah Al Mahmud, and Omar Mubin

Organizational Overview

Contextual Interaction Design Research: Enabling HCI

Martin Murer, Alexander Meschtscherjakov, Verena Fuchsberger, Manuel Giuliani, Katja Neureiter, Christiane Moser, Ilhan Aslan, and Manfred Tscheligi
Organisational Overview: Institute for Design and Assessment of Technology, Vienna University of Technology (TU Wien) 624


Technology Experience Research: A Framework for Experience Oriented Technology Development 626

Manfred Tscheligi, Sebastian Egger, Peter Fröhlich, Cristina Olaverri-Monreal, and Georg Regal

Usability Testing Practice at MIMOS Usability Lab 628

Norfarhana Abdollah, Ashok Sivaji, and Masitah Ghazali

Panels

Design, Innovation and Respect in the Global South 630

Jose Abdelnour-Nocera, Chris Csikszentmihályi, Torkil Clemmensen, and Christian Sturm

Interaction and Humans in Internet of Things 633

Markku Turunen, Daniel Sonntag, Klaus-Peter Engelbrecht, Thomas Olsson, Dirk Schnelle-Walka, and Andrés Lucero

Role of Conferences in Shaping the Field of HCI 637

Jan Gulliksen, Simone Diniz Junqueira Barbosa, Anirudha Joshi, Shaun Lawson, and Philippe Palanque

Tutorials

Design and Rapid Evaluation of Interactive Systems in Theory and Practice 640

Jochen Denzinger and Tom Gross

How to Design and Build New Musical Interfaces 642

Sidney Fels and Michael Lyons

Sketching User Experiences Tutorial 644

Nicolai Marquardt

Tutorial on Human Computer Interaction for Third Places - THCI-3P 647

Junia Anacleto, Sidney Fels, and Roberto Calderon

Tutorial: Modern Regression Techniques for HCI Researchers 651

Martin Schmettow

Working with Child Participants in Interaction Design 655

Janet C. Read
Workshops

Fostering Smart Energy Applications .................................................. 657
  Masood Masoodian, Elisabeth André, and Thomas Rist

Human Work Interaction Design (HWID): Design for Challenging Work Environments ............................................. 659
  Verena Fuchsberger, Martin Murer, Manfred Tscheligi, José Abdelnour-Nocera, Pedro Campos, Frederica Gonçalves, and Barbara Rita Barricelli

IFIP WG 13.2 Workshop on User Experience and User-Centered Development Processes ........................................ 661
  Marco Winckler, Regina Bernhaupt, Peter Forbrig, and Stefan Sauer

IFIP WG 13.5 Workshop on Resilience, Reliability, Safety and Human Error in System Development .................................... 663
  Chris Johnson, Mike Feary, Célia Martinie, Phil Palanque, and Regina Peldszus

Learning Beyond the Classroom: For and About Older and Disabled People .................................................. 665
  Gerhard Weber, Christopher Power, Helen Petrie, and Jenny Darzentas

Mediation and Meaning in HCI ................................................................. 667
  Susanne Bødker, Olav W. Bertelsen, Liam Bannon, Clarisse de Souza, Simone Barbosa, and Raquel Prates

Methods for Undertaking Research on Technology with Older and Disabled People .................................................. 669
  Helen Petrie, Blaithin Gallagher, and Jenny Darzentas

Social Image Research in the Age of Selfies .............................................. 671
  Casey Dugan and Sven Laumer

The Landscape of UX Requirements Practices .............................................. 673
  Gregorio Convertino, Nancy Frishberg, Jettie Hoonhout, Rosa Lanzilotti, Marta Kristin Lárusdóttir, and Effie Lai-Chong Law

Workshop on Designing Interaction and Visualization for Mobile Applications (DIViM 2015) ......................................... 675
  Shah Rukh Humayoun, Achim Ebert, Steffen Hess, and Gerrit van der Veer

Workshop on Interactivity in Healthcare Systems (IHS) ............................................. 677
  Vicki Hanson, Gemma Webster, and Matt Dennis

Author Index ................................................................. 679
Human-Computer Interaction – INTERACT 2015
15th IFIP TC 13 International Conference, Bamberg, Germany, September 14-18, 2015, Proceedings, Part I
Abascal, J.; Diniz Junqueira Barbosa, S.; Fetter, M.; Gross, T.; Palanque, P.; Winckler, M. (Eds.)
2015, XLV, 584 p. 168 illus., Softcover
ISBN: 978-3-319-22700-9