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Paula Kotzé, Gary Marsden, Gitte Lindgaard, Janet Wesson, Marco Winckler

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Janet Wesson Marco Winckler (Eds.)

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Proceedings, Part IV



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Volume Editors

Paula Kotzé

CSIR Meraka Institute, PO Box 395, Pretoria 0001, South Africa

E-mail: pkotzel@csir.co.za

Gary Marsden

University of Cape Town, Department of Computer Science

Private Bag X3, Rondebosch 7701, Cape Town, South Africa

E-mail: gaz@cs.uct.ac.za

Gitte Lindgaard

Carleton University, 1125 Colonel By Drive, Ottawa, ON K1S 5B6, Canada

E-mail: gitte.lindgaard@carleton.ca

Janet Wesson

Nelson Mandela Metropolitan University, Department of Computing Sciences

PO Box 77000, Port Elisabeth 6031, South Africa

E-mail: janet.wesson@nmmu.ac.za

Marco Winckler

University Paul Sabatier, Institute of Research in Informatics of Toulouse (IRIT)

118 Route de Narbonne, 31062 Toulouse Cedex 9, France

E-mail: winckler@irit.fr

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Foreword

INTERACT 2013 was the 14th of a series of INTERACT international conferences supported by the International Federation for Information Processing (IFIP) Technical Committee 13 on Human–Computer Interaction.

This year, INTERACT was held in Cape Town (South Africa), organized by the Nelson Mandela Metropolitan University (Port Elizabeth) and the Meraka Institute of Council for Scientific and Industrial Research (Pretoria) in collaboration with the University of Cape Town.

The Conference theme for INTERACT 2013, “Designing for Diversity,” recognizes the interdisciplinary, multidisciplinary and intercultural spirit of human–computer interaction (HCI) research and practice. The conference welcomes research and reports of practice that acknowledge diverse disciplines, abilities, cultures, and societies, and that address both the technical and social aspects of HCI. Within the broad umbrella of HCI, the conference sought contributions addressing new and emerging HCI disciplines, bridging cultural differences, and tackling important social problems.

Like its predecessors, INTERACT 2013 highlighted, to both the academic and the industrial world, the importance of the HCI discipline and its most recent breakthroughs on 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 overarching theories of HCI, found in INTERACT 2013 an exciting forum for communication with people of similar interests, to encourage collaboration and to learn.

INTERACT 2013 brought the conference to South Africa and Africa for the very first time. The African tradition of HCI focuses very much on the human and social aspects of HCI, recognizing the diversity of its people and the circumstance in which they go about their everyday lives. We hope that INTERACT 2013 will be remembered as a conference that brought the diversity of HCI research to the forefront, making the computerized world a better place for all, regardless of where they come from.

INTERACT 2013 took place 29 years after the first INTERACT held in September 1984 in London, UK. The IFIP Technical Committee 13 aims to develop the science and technology of the interaction between humans and computing devices through different Working Groups and Special Interests Groups, all of which, together with their officers, are listed within these proceedings.

We thank all the authors who chose INTERACT 2013 as the venue to publish their research. This was again an outstanding year for the conference in terms of submissions in all the technical categories, especially since the conference moved away from the traditional predominantly European venues. In total, we received 639 submissions. Of these, 270 submissions were accepted:

- 128 as full research papers
- 77 as short research papers
- 31 as interactive posters
- 2 as industrial programme papers
- 4 as panels
- 1 as a special interest group
- 1 as a tutorial
- 9 as workshops
- 9 to the African Masters Consortium
- 8 to the Doctoral Consortium

The acceptance rate for the full and short research papers was 31% and 45%, respectively.

A Programme Committee meeting consisting of the Technical Programme Chairs and the Track Chairs, as well as member of IFIP Technical Committee 13, preceded the final decision on which submissions to accept. This powerful effort was only possible thanks to the diligent work of many people. Our sincere gratitude goes to the almost 700 members of our International Programme Committee who willingly assisted 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. A special thank you must go to our Track Chairs, who put in a tremendous amount of work to ensure that quality was maintained throughout.

In addition, we have to thank the members of the Organizing Committee, the staff at the Council for Industrial and Scientific Research, Nelson Mandela Metropolitan University and the University of Cape Town for their unflagging assistance with all aspects of planning and managing the many administrative and organizational issues. We also have to thank our student volunteers for making sure that everything ran smoothly at the conference itself.

Finally, we wish to express a special thank you to the Proceedings Publication Chair, Marco Winckler, who painstakingly put this volume together.

September 2013

Paula Kotzé
Janet Wesson
(INTERACT 2013 Conference Chairs)
Gary Marsden
Gitte Lindgaard
(INTERACT 2013 Technical Programme Chairs)

IFIP TC13

Established in 1989, the International Federation for Information Processing Technical Committee on Human-Computer Interaction (IFIP TC13) is an international committee of 30 member national societies and seven Working Groups, representing specialists in human factors, ergonomics, cognitive science, computer science, design, and related disciplines. INTERACT is its flagship conference, staged biennially in different countries in the world.

IFIP TC13 aims to develop the science and technology of human-computer interaction (HCI) by encouraging empirical research, promoting the use of knowledge and methods from the human sciences in design and evaluation of computer systems; promoting better understanding of the relationship between formal design methods and system usability and acceptability; developing guidelines, models and methods by which designers may provide better human-oriented computer systems; and, cooperating with other groups, inside and outside IFIP, to promote user-orientation and humanization in system design. Thus, TC13 seeks to improve interactions between people and computers, encourage the growth of HCI research, and disseminate these benefits worldwide.

The main orientation is toward users, especially the non-computer professional users, and how to improve human-computer relations. Areas of study include: the problems people have with computers; the impact on people in individual and organizational contexts; the determinants of utility, usability, and acceptability; the appropriate allocation of tasks between computers and users; modeling the user to aid better system design; and harmonizing the computer to user characteristics and needs.

While the scope is thus set wide, with a tendency toward general principles rather than particular systems, it is recognized that progress will only be achieved through both general studies to advance theoretical understanding and specific studies on practical issues (e.g., interface design standards, software system consistency, documentation, appropriateness of alternative communication media, human factors guidelines for dialogue design, the problems of integrating multimedia systems to match system needs and organizational practices, etc.).

In 1999, TC13 initiated a special IFIP Award, the Brian Shackel Award, for the most outstanding contribution in the form of a refereed paper submitted to and delivered at each INTERACT. The award draws attention to the need for a comprehensive human-centered approach in the design and use of information technology in which the human and social implications have been taken into account. Since the process to decide the award takes place after papers are submitted for publication, the award is not identified in the proceedings.

IFIP TC13 stimulates working events and activities through its Working Groups (WGs) and Special Interest Groups (SIGs). WGs and SIGs consist of HCI experts from many countries, who seek to expand knowledge and find solutions to HCI issues and concerns within their domains, as outlined below.

- WG13.1 (Education in HCI and HCI Curricula) aims to improve HCI education at all levels of higher education, coordinate and unite efforts to develop HCI curricula and promote HCI teaching.
- WG13.2 (Methodology for User-Centered System Design) aims to foster research, dissemination of information and good practice in the methodical application of HCI to software engineering.
- WG13.3 (HCI and Disability) aims to make HCI designers aware of the needs of people with disabilities and encourage development of information systems and tools permitting adaptation of interfaces to specific users.
- WG13.4 (also WG2.7) (User Interface Engineering) investigates the nature, concepts and construction of user interfaces for software systems, using a framework for reasoning about interactive systems and an engineering model for developing user interfaces.
- WG13.5 (Human Error, Safety and System Development) seeks a framework for studying human factors relating to systems failure, develops leading-edge techniques in hazard analysis and safety engineering of computer-based systems, and guides international accreditation activities for safety-critical systems.
- WG13.6 (Human-Work Interaction Design) aims at establishing relationships between extensive empirical work-domain studies and HCI design. It will promote the use of knowledge, concepts, methods and techniques that enable user studies to procure a better apprehension of the complex interplay between individual, social and organizational contexts and thereby a better understanding of how and why people work in the ways that they do.
- WG13.7 (Human-Computer Interaction and Visualization) is the newest of the working groups under the TC13. It aims to establish a study and research program that will combine both scientific work and practical applications in the fields of HCI and visualization. It will integrate several additional aspects of further research areas, such as scientific visualization, data mining, information design, computer graphics, cognition sciences, perception theory, or psychology, into this approach.
- SIG 13.1 (HCI and International Development) aims to promote the application of interaction design research, practice and education to address the needs, desires and aspirations of people in the developing world; support and develop the research, practice and education capabilities of HCI institutions and organizations based in the developing world; develop links between the HCI community in general, and IFIP TC13 in particular, with other relevant communities involved in development, especially IFIP WG 9.4 Computers in Developing Countries.

- SIG 13.2 (Interaction Design and Children) aims to provide a forum for all things relating to interaction design and HCI where the intended users or appropriators of the technology or service are children. The definition of children is broad rather than narrow, including toddlers and teenagers, but the core work, currently at least, is with children in junior schools.

New Working Groups and Special Interest Groups are formed as areas of significance to HCI arise. Further information is available at the IFIP TC13 website: <http://www.tc13.org>

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Table of Contents – Part IV

Long and Short Papers (Continued)

Supporting Physical Activity

- The Development and Evaluation of an Interactive System for Age Related Musculoskeletal Rehabilitation in the Home 1
Mobolaji Ayoade, Stephen Uzor, and Lynne Baillie
- Walking in the Wild – Using an Always-On Smartphone Application to Increase Physical Activity 19
Tim Harries, Parisa Eslambolchilar, Chris Stride, Ruth Rettie, and Simon Walton

Supporting Shared Activities

- F-Formations in Cooking Together: A Digital Ethnography Using YouTube 37
Jeni Paay, Jesper Kjeldskov, Mikael B. Skov, and Kenton O’Hara
- Practices Surrounding Event Photos 55
Dhaval Vyas, Anton Nijholt, and Gerrit van der Veer
- Sharing Experiences over Video: Watching Video Programs together at a Distance 73
Anna Macaranas, Gina Venolia, Kori Inkpen, and John C. Tang

Sustainability

- Exploring Reactions to Widespread Energy Monitoring 91
James A. Colley, Benjamin Bedwell, Andy Crabtree, and Tom Rodden
- HCI for City Farms: Design Challenges and Opportunities 109
Peter Lyle, Jaz Hee-jeong Choi, and Marcus Foth
- Towards Engaged Consumption: New Sources of Inspiration for Eco-feedback Design 117
Stephen Snow and Margot Brereton
- Sustainability at Home: An Exploratory Study on Monitoring Needs and Energy Management Actions of Solar Power Producers 125
Dounia Lahoual and Myriam Fréjus

WattsBurning on My Mailbox: A Tangible Art Inspired Eco-feedback Visualization for Sharing Energy Consumption	133
<i>Filipe Quintal, Mary Barreto, Nuno Nunes, Valentina Nisi, and Lucas Pereira</i>	

Tabletop Computing

Dynamic Spatial Positioning: Physical Collaboration around Interactive Table by Children in India	141
<i>Izdihar Jamil, Kenton O'Hara, Mark Perry, Abhijit Karnik, Mark T. Marshall, Swathi Jha, Sanjay Gupta, and Sriram Subramanian</i>	
Dynamic Tangible User Interface Palettes	159
<i>Martin Spindler, Victor Cheung, and Raimund Dachsett</i>	
TIDE: Lightweight Device Composition for Enhancing Tabletop Environments with Smartphone Applications	177
<i>Léo Sicard, Aurélien Tabard, Juan David Hincapié-Ramos, and Jakob E. Bardram</i>	

Text Comprehensibility

Evaluating the Effect of Phrase Set in Hindi Text Entry	195
<i>Mohit Jain, Khushboo Tekchandani, and Khai N. Truong</i>	
Frequent Words Improve Readability and Short Words Improve Understandability for People with Dyslexia	203
<i>Luz Rello, Ricardo Baeza-Yates, Laura Dempere-Marco, and Horacio Saggion</i>	
TicQR: Flexible, Lightweight Linking of Paper and Digital Content Using Mobile Phones	220
<i>Jennifer Pearson, Simon Robinson, George Buchanan, and Matt Jones</i>	

Tracking Eyes and Head

One Half or 50%? An Eye-Tracking Study of Number Representation Readability	229
<i>Luz Rello, Susana Bautista, Ricardo Baeza-Yates, Pablo Gervás, Raquel Hervás, and Horacio Saggion</i>	
Studying a Head Tracking Technique for First-Person-Shooter Games in a Home Setting	246
<i>Torben Sko, Henry Gardner, and Michael Martin</i>	

Tracking Eyes in Service Prototyping	264
<i>Monchu Chen and Veraneka Lim</i>	

Usability Evaluation and Technology Acceptance

Did We Miss Something? Correspondence Analysis of Usability Data . . .	272
<i>Stanislaw Zabramski and Wolfgang Stuerzlinger</i>	
Social Overlays: Collectively Making Websites More Usable	280
<i>Tao Dong, Mark S. Ackerman, Mark W. Newman, and Gaurav Paruthi</i>	
Usability Evaluation in a Digitally Emerging Country: A Survey Study	298
<i>Fulvio Lizano, Maria Marta Sandoval, Anders Bruun, and Jan Stage</i>	
Understanding Diversity – The Impact of Personality on Technology Acceptance	306
<i>Kay Behrenbruch, Matthias Söllner, Jan Marco Leimeister, and Ludger Schmidt</i>	

User Preferences and Behaviour

A Vocabulary to Access Users' Cultural Perspectives in Human-Computer Interaction	314
<i>Catia Maria Dias Ferreira, Luciana Cardoso de Castro Salgado, and Clarisse Sieckenius de Souza</i>	
Characteristics of Elderly User Behavior on Mobile Multi-touch Devices	323
<i>Susumu Harada, Daisuke Sato, Hironobu Takagi, and Chieko Asakawa</i>	
From Persona to Techsona	342
<i>Susanne Bødker and Clemens Nylandsted Klokmose</i>	
Going Global with Personas	350
<i>Lene Nielsen, Kira Storgaard Nielsen, Jan Stage, and Jane Billestrup</i>	
On Users' Preference on Localized vs. Latin-Based CAPTCHA Challenges	358
<i>Christos Fidas and Artemios G. Voyiatzis</i>	

User Requirements Capture and Analysis

Designing for the Functionality South African Internet Banking Websites Should Provide to Address the Needs of Generation-Y Users	366
<i>Sebatso Mtimkulu, Judy van Biljon, and Tobias van Dyk</i>	
“Nobody Other Than Me Knows What I Want:” Customizing a Sports Watch	384
<i>Piia Nurkka</i>	
Online Requirements and Portal Design for Female University Science and Technology Students in Kenya	403
<i>Stephen Kimani, Eunice Njeri, and John Njue</i>	

UX in Work/Educational Contexts

Finger on the Pulse: The Value of the Activity Stream in the Enterprise	411
<i>Ido Guy, Tal Steier, Maya Barnea, Inbal Ronen, and Tal Daniel</i>	
Relationship-Based Business Process Crowdsourcing?	429
<i>Jacki O’Neill and David Martin</i>	
User Experience and Learning Experience in Online HCI Courses	447
<i>Saila Ovaska</i>	

Voice/Sound-Based Computing

Audvert: Using Spatial Audio to Gain a Sense of Place	455
<i>Liam Betsworth, Nitendra Rajput, Saurabh Srivastava, and Matt Jones</i>	
Rhythms of the Domestic Soundscape: Ethnomethodological Soundwalks for Phatic Technology Design	463
<i>Hanif Baharin, Sean Rintel, and Stephen Viller</i>	
“Roger that!” — The Value of Adding Social Feedback in Audio-Mediated Communications	471
<i>Rahul Rajan, Joey Hsiao, Deven Lahoti, and Ted Selker</i>	
Supporting Voice Content Sharing among Underprivileged People in Urban India	489
<i>Christian Remy, Sheetal K. Agarwal, Arun Kumar, and Saurabh Srivastava</i>	

Interactive Posters

Adding Vibrotactile Feedback to Large Interactive Surfaces	507
<i>Julian Seifert, Markus Packeiser, and Enrico Rukzio</i>	
Analysis and Visualization of Interactions with Mobile Web Applications	515
<i>Paolo Burzacca and Fabio Paternò</i>	
Beats Down: Using Heart Rate for Game Interaction in Mobile Settings	523
<i>Claudia Stockhausen, Justine Smyzek, and Detlef Krömker</i>	
Cultural Congruence and Rating Scale Biases in Homepages	531
<i>Gitte Lindgaard, Cathy Dudek, and Gerry Chan</i>	
Diverse Ecologies – Interdisciplinary Development for Cultural Education	539
<i>Michael Heidt, Kalja Kanellopoulos, Linda Pfeiffer, and Paul Rosenthal</i>	
Evaluation of PhonAge: An Adapted Smartphone Interface for Elderly People	547
<i>Farah Arab, Yasir Malik, and Bessam Abdulrazak</i>	
Experimentally Manipulating Positive User Experience Based on the Fulfilment of User Needs	555
<i>Andreas Sonnleitner, Marvin Pawlowski, Timm Kässer, and Matthias Peissner</i>	
Floffy: Designing an Outdoor Robot for Children	563
<i>Omar Mubin, Luke Vink, Pieter Oosterwijk, Abdullah Al Mahmud, and Suleman Shahid</i>	
Human-Spreadsheet Interaction	571
<i>Andrea Kohlhase</i>	
Improving Students Learning Programming Skills with ProGames – Programming through Games System	579
<i>Raquel Hijón-Neira, Ángel Velázquez-Iturbide, Celeste Pizarro-Romero, and Luís Carriço</i>	
Long-Term Experiences with an Iterative Design of a QR-Code-Based Payment System for Beverages	587
<i>Max-Emanuel Maurer, Alexander De Luca, Alina Hang, Doris Hausen, Fabian Hennecke, Sebastian Loehmann, Henri Palleis, Hendrik Richter, Simon Stusak, Aurélien Tabard, Sarah Tausch, Emanuel von Zezschwitz, Franziska Schwamb, Heinrich Hussmann, and Andreas Butz</i>	

Moment Machine: Opportunities and Challenges of Posting Situated Snapshots onto Networked Public Displays	595
<i>Nemanja Memarovic, Ava Fatah gen Schieck, Efstathia Kostopoulou, Moritz Behrens, and Martin Traunmueller</i>	
Overview Scrollbar: A Scrollbar Showing an Entire Document as an Overview	603
<i>Ko Mizoguchi, Daisuke Sakamoto, and Takeo Igarashi</i>	
Participatory Design for Cultural Representation: A Cultural Transparency Perspective	611
<i>Amalia G. Sabiescu and Nemanja Memarovic</i>	
Reducing Driver Task Load and Promoting Sociability through an Affective Intelligent Driving Agent (AIDA)	619
<i>Kenton Williams and Cynthia Breazeal</i>	
Semantic Modelling in Support of Adaptive Multimodal Interface Design	627
<i>Elena Tsiporkova, Anna Hristoskova, Tom Tourwé, and Tom Stevens</i>	
Supporting Improved Maternity Care by Midwives: Design Opportunities and Lessons Learned	635
<i>Abdullah Al Mahmud and David V. Keyson</i>	
Technology Enhanced PBL in HCI Education: A Case Study	643
<i>Christina Vasiliou, Andri Ioannou, and Panayiotis Zaphiris</i>	
The ‘Relay Ideation’ Technique: Moving from Problem Understanding to Problem Solving in the Design Process	651
<i>Karin Slegers, Pieter Duysburgh, and An Jacobs</i>	
The Effect of Stress on Cognitive Load Measurement	659
<i>Dan Conway, Ian Dick, Zhidong Li, Yang Wang, and Fang Chen</i>	
The PEW Framework for Worth Mapping	667
<i>Fatoumata Camara, Gaëlle Calvary, and Rachel Demumieux</i>	
The Profile of Law Clerks Using Judiciary Informatics in Turkey	675
<i>Zerrin Sungur, Özlem Alpu, Özlem Oktal, and Berna Yazıcı</i>	
Towards a Communication System for People with Athetoid Cerebral Palsy	681
<i>Yohan Guerrier, Christophe Kolski, and Franck Poirier</i>	
Towards Supporting the Existing Workplace Practices of a Community of Brazilian Healthcare Professionals	689
<i>Roberto Calderon, Sidney Fels, and Junia Anacleto</i>	

Traveller: An Interactive Cultural Training System Controlled by User-Defined Body Gestures	697
<i>Felix Kistler, Elisabeth André, Samuel Mascarenhas, André Silva, Ana Paiva, Nick Degens, Gert Jan Hofstede, Eva Krumhuber, Arvid Kappas, and Ruth Aylett</i>	
Usability Guidelines for Mobile Devices: Length of Hyperlinks	705
<i>Eva Garcia-Lopez, Antonio Garcia-Cabot, Luis de-Marcos, and Jose-Ramon Hilerá</i>	
User-Centered Design between Cultures: Designing for and with Immigrants	713
<i>Jan Bobeth, Stephanie Schreitter, Susanne Schmehl, Stephanie Deutsch, and Manfred Tscheligi</i>	
Using Graphical Representations to Support the Calculation of Infusion Parameters	721
<i>Sandy J.J. Gould, Anna L. Cox, and Duncan P. Brumby</i>	
Visual Conversational Interfaces to Empower Low-Literacy Users	729
<i>Sheetal K. Agarwal, Jyoti Grover, Arun Kumar, Monia Puri, Meghna Singh, and Christian Remy</i>	
Visual Indication while Sharing Items from a Private 3D Portal Room UI to Public Virtual Environments	737
<i>Minna Pakanen, Leena Arhipainen, Jukka H. Vajus-Anttila, and Olli-Pekka Pakanen</i>	
Web Design for Science Museum towards Engaging User Experience	745
<i>Mohd Syaheezam Asyraq Yamin and Eswati Azni Jaafar</i>	

Industry Tracks

Lessons Learned from Designing Non-traditional Interfaces for Educational Applications in South Africa	755
<i>Michael Wolf</i>	
The Bigger Picture: The Use of Mobile Photos in Shopping	764
<i>Maryam Tohidi and Andrew Warr</i>	

Panels

Human-Centred Design: What's Happening in African Industry?	772
<i>Susan Dray, Phil Barrett, Mark Kamau, Edna Chekule, and Tamara Alsheikh</i>	

Panel on Community Collaboration 773
*Anicia Peters, Darelle van Greunen, Gereon Koch Kapuire,
 Anupama Saxena, Dan Orwa, Bongwiwe Dlutu-Siya, and
 Nicola J. Bidwell*

Seeing ‘the Obvious’ as Subject and Object of Cross-Cultural HCI
 Design 774
*Jose Abdelnour-Nocera, Heike Winschiers, Torkil Clemmensen, and
 Christian Sturm*

What Can Design Laboratories Do? 775
*Thomas Binder, Lone Malmborg, Per-Anders Hillgren,
 Jörn Messeter, Yanki Lee, and Sibukele Gumbo*

Special Interests Groups

Promoting Human-Computer Interaction Values and Practices
 in Small and Emerging Economies 776
*David Lamas, Panayiotis Zaphiris, Georgios Christou, and
 Alfredo Terzoli*

Tutorial

Designing High-Quality Surveys for HCI Research 777
Hendrik Müller and Aaron Sedley

Workshops

Building Community Collaboration 778
*Anicia Peters, Darelle van Greunen, Heike Winschiers-Theophilus,
 Shilumbe Chivuno-Kuria, Kagonya Awori, and Anirudha Joshi*

Challenges from the Future: Bridging the Gaps through HCI
 Education 779
Lars Oestreicher and Paula Alexandra Silva

Human Work Interaction Design (HWID): Past History and Future
 Challenges 780
*Torkil Clemmensen, Jose Abdelnour-Nocera, Arminda Lopes, and
 Bengt Sandblad*

Participatory Design for Persons with Cognitive or Sensory
 Impairments 781
Karin Slegers, Pieter Duysburgh, Niels Hendriks, and Helma van Rijn

Peripheral Interaction: Embedding HCI in Everyday Life 782
*Doris Hausen, Saskia Bakker, Elise van den Hoven,
 Andreas Butz, and Berry Eggen*

Rethinking Universal Accessibility: A Broader Approach Considering the Digital Gap	783
<i>Julio Abascal, Simone Diniz Junqueira Barbosa, Andrew Dearden, Anirudha Joshi, Daniel Orwa Ochieng, Gerhard Weber, and Panayiotis Zaphiris</i>	
Second International Workshop on (Re)Creating Lively Cities through Ambient Technologies: Arts, Culture and Gastronomic Experiences*	784
<i>Artur Lugmayr, Jaz Hee-jeong Choi, and Kirralie Houghton</i>	
Urban Agriculture: A <i>Growing Field</i> of Research	785
<i>Peter Lyle, Jaz Hee-jeong Choi, Shaun Lawson, Christopher Lueg, Alan Chamberlain, Marcus Foth, Anna Meroni, and Margot Brereton</i>	
Walking for Data	786
<i>Mads Bødker, David Browning, and Nina Dam Meinhardt</i>	
Author Index	787