Lecture Notes in Computer Science 6389

Commenced Publication in 1973
Founding and Former Series Editors:
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HCI in Work and Learning, Life and Leisure

6th Symposium of the Workgroup
Human-Computer Interaction
and Usability Engineering, USAB 2010
Klagenfurt, Austria, November 4-5, 2010
Proceedings

 Springer

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Preface

The Human–Computer Interaction & Usability Engineering Workgroup (Arbeitskreis HCI&UE) of the Austrian Computer Society (Österreichische Computer Gesellschaft, OCG) has been serving as an international platform for interdisciplinary exchange, research and development since February 2005. While human–computer interaction (HCI) traditionally brings psychologists and computer scientists together, the inclusion of usability engineering (UE), a software engineering discipline ensuring the appropriate implementation of applications, has become indispensable. Because of the fast developments in information and communication technologies (ICT), the fields of application of HCI and UE are broader than ever. Therefore, USAB 2010 had, in comparison to past USAB conferences, quite a broad focus on all potential aspects of HCI in work environments, learning, private life and leisure activities. Each of these areas of application includes various challenges for HCI and UE, which go far beyond the classical desktop interface as well as usability norms and definitions postulated in the late twentieth century.

The contributions for USAB 2010 provide important insights on the actual research activities in the field and support the interested audience by presenting the state of the art in HCI research as well as giving valuable input on questions arising when planning or designing research projects. Because of the increasing propagation of the field of HCI research, it is not possible to address all areas within a small conference; however, this is not the goal of USAB 2010—it should be seen as a metaphorical counterpart of a wholesale, an HCI delicatessen shop providing a tasting menu with different courses (hopefully) catering to all tastes.

As a kind of appetizer, the session "Psychological Factors of HCI" puts a focus on psychological and social aspects to be considered in the development of end user applications. Based on the example of the participatory design of visual analytics, Mayr et al. illustrate the importance of human problem solving strategies. In their first paper Pommeranz et al. show how the quality of decision support systems can influence the elicitation of user preferences. Arning et al. focus their contribution on usage motives and usage barriers related to the use of mobile technologies. In their second contribution, Pommeranz et al. address the relevance of context and subjective norm on the acceptance of a mobile negotiation support system.

The session "e-Health and HCI" illustrates that although the health of the elderly is a central issue in today's discussion on demography, they are not the only group who can benefit from ICT research. Holzinger et al. sketch an alarming picture of the health status of the youth in Austria, but also show possibilities how to combine the hype of mobile devices and Web 2.0 to change health awareness within youths. Wilkowska et al. focus their contribution on the role of gender in the acceptance of medical devices and show that there are indeed

differences in specific situations. The health system of Western countries is pro- totypical for high public expenditure; therefore financing usability engineering activities seems to be a difficult task. Verhoeven and Gemert-Pijnen show that discount usability methods can even be applied to health care settings with very low costs (which, invested in usability, exhibit a high return on investment, as illustrated by Bias & Mayhew[1]). Another way of efficient HCI application is the re-use of existing knowledge, e.g., on the basis of HCI patterns. Doyle et al. present an approach to share knowledge in the health care sector by establishing a customized pattern language structured on the needs of the area of application.

Since the group of the elderly plays an important role in today's HCI research, it is considered also in USAB. The session "Enhancing the Quality of Life of Elderly People" is motivated by the fact that current and future generations of the elderly are more active than the generations of elderly in the past. To support their activity, HCI and UE research has to focus on their needs. Schaar and Ziefle show how e-travel services could be enhanced for this special target group. To enhance the activity of elderly at home, Harley et al. present the possibilities of game playing based on the Nintendo Wii console in a sheltered home. But even when activity is already reduced, there are possibilities to support elderly with technology, which, however, has to fulfill certain usability requirements. Otjacques et al. present the system SAMMY, which supports the daily life of elderly in a retirement home.

Not only the elderly, but all user groups not optimally supported by ICT are in the focus of HCI research in order to make e-inclusion not an empty phrase. The session "Supporting Fellow Humans with Special Needs" is therefore de- voted to this heterogeneous group of users. Kranjc and his colleagues address the possibilities to apply the user-centered design approach to enhance mobile devices for visually impaired people, whereas Debevs et al. focus on the respec- tive possibilities for hearing-impaired people. Finally, Curatelli and Martinengo address motor-impaired users and present a keyboard with a specific layout based on pseudo-syllables.

Besides e-health for different groups of people, e-learning includes various challenges for HCI researchers. The authors' contributions to the session "Teach- ing and Virtual/Mobile Learning" face these challenges. Safta and Gorgan an- alyze the characteristics and structure of the teaching process and show how to implement these into a system for computer-based learning. De Troyer et al. discuss the possibilities of adaptive virtual learning environments. Gil-Rodriguez and Rebaque-Rivas focus their contribution on online learning with mobile de- vices while commuting.

Another variation of HCI is presented in the session "Enhanced and New Methods in HCI Research." Stickel et al. as well as Stork et al. focus their contributions on visual aspects and show possible enhancements to existing ap- proaches. Stickel et al. propose a metric which can be used for measuring the

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[1] Bias, R. G. and Mayhew, D. J. 2005 Cost-Justifying Usability: an Update for the Internet Age. Morgan Kaufmann Publishers Inc.

visual complexity of websites and can therefore be used as some kind of automated evaluation criterion, whereas Stork et al. show how contextual cues can support the quality and efficiency of visual search. Schrammel et al. illustrate an extraordinary approach and propose body motion to be included in HCI research.

The dessert of our menu can be chosen between the special thematic sessions UXFUL[2] and WIMA[3], which put a focus on the cutting edge research topics user experience and multimedia applications, respectively. The program is rounded up by a tutorial given by Ebner et al. on the usage of iPad, iPhone & Co.

USAB 2010 received a total of 55 submissions. We followed a careful and rigorous review process, assigning each paper to a minimum of three and maximum of five reviewers. On the basis of the reviewers' results, 10 full papers and 10 short papers were accepted in the main track of the conference. The two special thematic sessions, UXFUL and WIMA, were established with the intensive support of the organizing colleagues and contributed a further 13 papers to the program. Additionally, to give a selected authors the opportunity to show their work in progress, a poster presentation section was created. The scientific program, the vicinity to the melting pot of ICT research, development and application (Lakeside Science and Technology Park) and the involvement of the local industry, made USAB 2010 a platform that brought together the scientific community focused on HCI and usability with interested people from industry, business, or government as well as from other scientific disciplines. The final product can be seen as a valuable piece of the mosaic of further development of the HCI & UE community. The credit for this belongs to each and every person who contributed to making USAB 2010 a great success: the authors, reviewers, sponsors, organizations, supporters, the members of the organization team, and all the volunteers, without whose help this deli would never have been built.

November 2010

Gerhard Leitner
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[2] Enabling User Experience with Future Interactive Learning Systems.
[3] Interactive Multimedia Applications.

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We are grateful to the companies, institutions and organizations for their support in our aims to bridge Science and Industry. Their logos are displayed on **http://usab2010.uni-klu.ac.at/**

Published with the support of the Research Council (Forschungsrat) of the University of Klagenfurt out of the sponsorship of the City of Klagenfurt.

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