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HCI aspects of mobile devices and services

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Predictions about the booming future of mobile technologies and talk about the mobile revolution abound in all media, from newspapers to Internet discussions, from TV shows to technical journals. It is taken for granted that the most common way to access the Internet will soon be through mobile devices and that everyone, even those who never wanted to use a computer, will embrace the use of mobile services. However, if human–computer interaction (HCI) aspects of mobile technologies are not properly addressed, the above mentioned scenario is not so likely to come true. Users (especially novice ones) will not enthusiastically adopt mobile computing devices if we are not able to prevent the pains and complexities of interacting through very limited input and output facilities. Mobile services will not be successful if we do not understand mobile users and design for their contexts, which are very different from the ones traditionally studied in HCI.

This special issue of *Personal and Ubiquitous Computing* originates from a selected set of the best papers presented at Mobile HCI 2003, the 5th Symposium on Human–Computer Interaction with Mobile Devices and Services [1]. Mobile HCI is the international conference where academics and practitioners meet to focus specifically on the challenges and solutions for effective interaction with mobile devices and services. It covers the design, evaluation and application of HCI techniques and approaches for all mobile contexts. Very strict selection criteria were applied to choose the papers presented at the conference: 122 submissions were received from 26 countries, and only 21 full papers and 29 short papers were accepted (the selection rate was 33% for full papers and 49% for short papers). The accepted full papers were further screened to invite authors of

some of the best papers to submit an updated, extended and revised version of their work for possible publication in this special issue. Each of these new papers has been carefully reviewed by two or three experts in the field, who provided authors with detailed advice about how to further improve the quality of their final publication.

The eight papers included in this issue are the result of the above mentioned process. They give a clear picture of several major issues that are currently studied by the mobile HCI community and the methods used in these studies. In particular, the reader will notice the central role users have in mobile HCI research: to determine requirements for mobile devices and services, researchers are increasingly looking at ethnographic methods and situated studies of the use of technology [2–4]; the proposed systems are then evaluated on users with controlled experiments [5], more informal questionnaires [6, 7] and interviews [8].

A research trend that unambiguously emerges from recent work in mobile HCI concerns how to improve interaction with users and how to offer them new or better services through the exploitation of location information: indeed, more than half of the papers [3, 4, 6–8] in this issue focus specifically on location-awareness aspects.

A more established line of research in mobile HCI concerns input techniques to more conveniently operate mobile devices through the severely limited peripherals they offer: two of the papers [5, 9] in this issue are specifically devoted to these topics.

Taken as a whole, this special issue spans a wide set of technologies for the mobile user (PDAs, cellular phones, different kinds of wireless networks, different location-identification systems, wearable sensors) and discusses the implications for users in achieving several purposes (visiting museums, writing messages, planning social events, recording travel experiences, gaming, connecting different devices in a wireless network, navigating a city, and even socially reinforcing traffic encounters among bikers).

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In closing, it is my hope that this special issue will contribute to increase the awareness that the design of mobile devices and services cannot be merely technology-driven (as it often happens today), but needs to be prompted by human needs and has to properly take into account human abilities, limitations, and preferences.

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