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Ubiquitous Intelligence and Computing

6th International Conference, UIC 2009
Brisbane, Australia, July 7-9, 2009
Proceedings

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Preface

This volume contains the proceedings of UIC 2009, the 6th International Conference on Ubiquitous Intelligence and Computing: Building Smart Worlds in Real and Cyber Spaces. The UIC 2009 conference was technically co-sponsored by the IEEE and the IEEE Computer Society Technical Committee on Scalable Computing. The conference was also sponsored by the Australian Centre of Excellence in Information and Communication Technologies (NICTA). UIC 2009 was accompanied by six workshops on a variety of research challenges within the area of ubiquitous intelligence and computing. The conference was held in Brisbane, Australia, July 7–9, 2009.

The event was the sixth meeting of this conference series. USW 2005 (First International Workshop on Ubiquitous Smart World), held in March 2005 in Taiwan, was the first event in the series. This event was followed by UISW 2005 (Second International Symposium on Ubiquitous Intelligence and Smart Worlds) held in December 2005 in Japan. Since 2006, the conference has been held annually under the name UIC (International Conference on Ubiquitous Intelligence and Computing). UIC 2006 was held in September 2006 in Wuhan and Three Gorges, China, followed by UIC 2007 held in July 2007 in Hong Kong, and UIC 2008 held in June 2008 in Oslo, Norway.

Ubiquitous sensors, computers, networks and information are paving the way toward a smart world in which computational intelligence is distributed throughout the physical environment to provide reliable and relevant services to people. This ubiquitous intelligence will change the computing landscape because it will enable new breeds of applications and systems to be developed and the realm of computing possibilities will be significantly extended. By enhancing everyday objects with intelligence, many tasks and processes can be simplified, the physical spaces where people interact, like workplaces and homes, can become more efficient, safer and more enjoyable. Ubiquitous computing, or pervasive computing, uses these smart things to create smart environments. A smart thing can be endowed with different levels of intelligence, and may be context-aware, interactive, reactive, proactive, assistive, adaptive, automated, sentient, perceptual, cognitive and/or autonomic. Research on ubiquitous intelligence is an emerging research field covering many disciplines. A series of grand challenges exist to move from the current level of computing services to the smart world of adaptive and intelligent services.

The UIC 2009 conference offered a forum for researchers to exchange ideas and experiences in developing intelligent/smart objects, environments, and systems. This year, the technical program of UIC drew from a large number of submissions: 92 papers submitted from 23 countries representing four regions Asia Pacific, Europe, North and South America. Each paper was reviewed (as a full paper) by at least three reviewers, coordinated by the international Program Committee.

The Program Committee accepted 26 high-quality papers for presentation, which corresponds to a 28% acceptance rate. The accepted papers provide research contributions in a wide range of research topics that were grouped into the following seven conference sessions: Context Awareness, Middleware and Services, Routing and Sensor Networks, Ubiquitous Networks and Devices, Location-Based Services, Security and Privacy, and Ubiquitous Intelligence.

In addition to the refereed papers, the proceedings include the abstract of the keynote address by Mohan Kumar titled “Distributed Computing in Opportunistic Environments,” and the keynote address by Tharam S. Dillon titled “Web of Things as a Framework for Ubiquitous Intelligence and Computing.” Furthermore, the proceedings include an invited paper by Stephen Yau with the title “An Efficient Approach to Situation-Aware Service Discovery in Pervasive Service Computing Environments.” We believe that the conference not only presented novel and interesting ideas, but also stimulated future research in the area of ubiquitous intelligence and computing.

Organization of conferences with a large number of submissions requires a lot of hard work and dedication from many people. We would like to take this opportunity to thank the numerous people whose work made this conference possible and ensured its high quality. First of all, we wish to thank the authors of submitted papers for their contribution to the technical program of the conference. We would further like to express our deepest gratitude to the Steering Committee Chairs, Jianhua Ma and Laurence T. Yang, for their timely advice and support during the whole process of the organization of UIC 2009. We also wish to express our greatest appreciation to the Vice Program Chairs (Yunhao Liu, Daniela Nicklas, Zhiwen Yu, Ramiro Liscano) for their hard work and commitment to quality during the paper selection process, and for their help with publicizing the conference. We would also like to thank all Program Committee members and external reviewers for their excellent job in reviewing papers, and the Advisory Committee for their continuous guidance.

We further acknowledge the excellent work of the Workshop Chairs (Robert C.H. Hsu, Mieso Denko) in organizing the six workshops, and Panel Chairs (Neil Bergmann, Max Muehlhaeuser) in organizing the UIC panel. Our thanks also go to the Publicity Chairs (Stephen J.H. Yang, Hassnaa Moustafa, Linda Jiang Xie, Evi Syukur, Sung-Bae Cho, Wenbin Jiang, Charalampos Z. Patrikakis) for advertising the conference and to the Web Chair (Peizhao Hu) for managing the conference website and helping with the editing of the conference proceedings. Last but not least, we would like to thank the NICTA Queensland Lab for its support, and The University of Queensland for hosting the conference.

July 2009

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