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## Editorial

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**Biographical notes:** Salvatore Vitabile received the Laurea degree in Electronic Engineering and the Doctoral degree in Computer Science from the University of Palermo, Italy, in 1994 and 1999, respectively. He is currently an Assistant Professor with the Department of Biopathology, Medical and Forensic Biotechnologies, University of Palermo, Italy. In 2007, he was a visiting professor in the Department of Radiology, Ohio State University, Columbus, USA. His research interests include specialised architecture design and prototyping, neural networks, biometric authentication systems, real-time driver assistance systems, multiagent system security and medical data processing. He is the Editor-in-Chief of the *International Journal of Adaptive and Innovative Systems* – Inderscience Publishers – and a member of the board of directors of SIREN (Italian Society of Neural Networks).

Antonio Gentile received the PhD in Electrical and Computer Engineering from the Georgia Institute of Technology in 2000. He is currently an Associate Professor in the Computer Science and Artificial Intelligence Laboratory – the DICGIM Department of the University of Palermo, Italy. He is also CEO and founder of InformAmuse S.r.l., an academic spin-off of the same university. His research interests include high-throughput portable processing systems, image and video processing architectures, embedded systems and architectures, speech processing, human-computer interfaces and mobile computing. He is also an Associate Editor of *Integration and of the International Journal of Grid and Utility Computing*. He is a senior member of the IEEE and ACM, and a member of the AEIT and the BICA.

Leonard Barolli is a Full Professor, at Department of Information and Communication Engineering, Fukuoka Institute of Technology (FIT), Japan. He has published more than 500 papers in referred Journals, Books and International Conference proceedings. He has served as a Guest Editor for many International Journals and has been a PC Chair and General Chair of many International Conferences. He is the Steering Committee Chair of CISIS and BWCCA International Conferences and Steering Committee Co-Chair of AINA, NBiS 3PGCIC, EIDWT, IMIS International Conferences. He is organisers of many International Workshops. He won many awards for his scientific work and has received many research funds. His research interests include network traffic control, fuzzy control, genetic algorithms, mobile computing, ad hoc networks and sensor networks. He is a member of SOFT, IPSJ, IEEE and IEEE CS.

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In recent years, advances in technology have enabled the development of mobile systems and applications that are increasingly present in our daily life. Non-invasive, pervasive and ubiquitous installations are sought today to respond to many application domains, where human users are at the centre. The evolution of these technologies is expanding the coverage of mobile applications, systems

and services. On the other hand, context awareness requires device sensing and reacting to environment and circumstances under which they are able to operate. To fulfil the potential for new services, applications and systems required by new mobile devices and platforms, several complex research issues on user interfaces and interaction models need to be further investigated.

This special issue serves the purpose of highlighting high-quality papers addressing recent advances on user interfaces and interaction models in context-based computing. The call-for-paper has attracted 24 submissions from all over the world. Among them, six papers were selected. With regret that owing to space limitations many high-quality papers have to be parted with.

In the *first paper*, a design of a Cloud Agency Interface and the implementation of an RESTfull to/from ACL gateway is presented. The proposed method allows for the communication between a collection of agent-based services, the Cloud world, and the agents' one, being compliant with open cloud computing interface (OCCI) and extending its model and services. The authors outline also the performance and scalability of the proposed solution.

In the *second paper*, the authors will try to depict the reasons why we are not in the internet-of-things era from three different points of view: interaction media, device integration and applications. Twenty-one years past the Weisers vision of Ubiquitous Computing, and it is yet to be fully fulfilled, despite of almost all the needed technology is already available. The widespread interest in UbiComp and the results in some of its fields, pose a question: why we aren't there yet?

In the *third paper*, the benefit of head gestures as a user interface to control hearing instruments (HIs) is investigated. The authors develop a prototype of a head-gesture-controlled HI, which was based on a customised wireless acceleration sensor for unconstrained and continuous real-time monitoring of the users head movements. The authors evaluate the system from a technical point of view and achieved very high precision and recall in spotting the two head gestures used: tilting the head to the left and right side. The benefit of the different HI interaction solutions depends on the users current situations and that all participating HI users would appreciate head gesture control as an additional, complementing user interface.

In the *fourth paper*, an efficient technique by adopting the concept of safe region is proposed. The work presents a technique to create a continuous Basic Safe Region by calculating the closest objects to the border of the moving query. The presented approach also introduces a

continuous Extended Safe Region by calculating the intersections among several range objects. The size of the safe regions obtained using the two approaches are then compared. The experimental results show that as long as the query remains in its specified safe region, expensive re-computation is not required, reducing computations and communications cost in client-server architectures.

In the *fifth paper*, an application data forwarding framework is introduced. The framework is based on a mobile user's primary device and geared towards energy savings for the multitude of devices a mobile user could interact. The authors provide an evaluation of the energy consumption and potentials for savings using their proposed approach in terms of cost-based evaluations. Assuming that external devices could derive data through cellular or wireless LAN connections, significant savings for the group of devices could be achieved. Specifically, for an active social network account with frequent updates, the external devices would be able to conserve power, while the additional burden on the primary device's battery remains reasonably low.

The *sixth and final paper* deals with the need to develop pervasive technologies that allow monitoring of patients at home, where medically permissible, in order to reduce pressures on formal healthcare spaces. Patients can ensure quality-of-life through comfort and adequate medical-monitoring, as well as providing significant data for ongoing medical evaluation and diagnosis. This requires two main elements of sensing: sensors to monitor the care environment and patient-mounted sensors to monitor physiological parameters. Cost-effective solutions are available for development smart care space monitoring and associated computer systems can maintain an appropriate level of intelligence.

As the guest editors of this special issue, we would like to thank all authors who have submitted papers to the special issue. Assistance from the editorial staff of the journal is also very much appreciated. Besides, the guest editors wish to acknowledge all reviewers who have generously given their time to review the papers. Finally, our special thanks go to Professor Yuh-Shyan Chen (Editor-in-Chief) for his support throughout the preparation of this special issue.