

Preface

Hamid Aghajan^a and Juan Carlos Augusto^{b,*}

^a *Department of Electrical Engineering, Stanford University, USA*

^b *School of Computing and Mathematics and Computer Science Research Institute, University of Ulster, UK*

1. One Year of JAISE

This is the fourth and final issue of the first volume of JAISE, the journal dedicated to reporting on pioneering research and development results in the areas of Ambient Intelligence (AmI) and Smart Environments (SmE). Many years of innovative research as well as a plethora of modern technology offerings act as underpinning elements to motivate and support further development in these areas. Much effort has been assessed over the recent years to creating working embodiments of smart spaces. Despite all that, AmI and SmE are still clearly in their early stages of conceptual development and testing. Given that any target application in these areas requires an integration of methods and tools from several different disciplines, migration from the conceptual level development to field deployment beyond lab prototypes has been a slow and often an unsteady process. The development cycle from technological implementation to user acceptance testing and design refinement remains a challenge and few instances of successful iteration leading to a product can be found. As with development in many other multi-disciplinary areas of research, working in AmI and SmE applications often means having to simultaneously focus on advancing one's field of specialty and constantly reaching out to and bridging with disciplines that may be remote to one's working area. Being preoccupied with own research, many researchers do not find an opportunity to link with areas adjacent to theirs or to keep aware of issues under leading-edge research in other fields. In applications covering multiple disciplines this lack of awareness quite likely leads to an unsuccessful outcome. For example, in a technology-based product that is intended to accompany the user at all times the lack of an integrated development and user testing cycle may either result in

a product that remains unacceptable by the intended users or in a concept that stays limited to idealised user studies and ignores the limitations of today's technology. A source of challenge is that different communities rarely interface or use a common forum to discuss the opportunities and challenges in their work, or to learn about the latest results in related areas. JAISE has aimed to act as the forum serving researchers and developers working on the various fields involved in AmI and SmE. It offers an opportunity to learn about the latest trends in various relevant fields while covering the results of in-depth studies in these fields. As such, the journal issues offer two types of coverage of topics in AmI and SmE: Regular issues include papers setting forth the latest results in any of the related topics while thematic issues provide a focused coverage of an area.

In its first volume, JAISE offered an inaugural issue with articles from several leading researchers in the fields of AmI and SmE, two thematic issues: one on wearable sensors and computing, and one on contributions of Artificial Intelligence to AmI, and the current issue which is a regular issue. As for some statistics, our acceptance ratio has been 46% (including the invited articles for the inaugural issue) and 38% excluding the inaugural issue. The average turnaround time for submitted papers has been 68 days.

We take this opportunity to thank our advisory and editorial board members, the authors, as well as the reviewers for their contribution to JAISE this year. The list of reviewers participating in the first volume of JAISE is included in this issue. We look forward to working together with all contributors to create another outstanding volume in the second year.

2. Upcoming Issues

The second volume of JAISE will include two thematic issues: one on computational modeling of

*Corresponding author. E-mail: jaise@iospress.nl.

human-oriented knowledge, and one on smart homes. For latest announcements and call for papers for the upcoming thematic and regular issues of JAISE please visit our web site at:
<http://www.iospress.nl/loadtop/load.php?isbn=18761364>

3. This Issues

The current issue of JAISE includes four papers:

- “Grounding Commonsense Knowledge in Intelligent Systems” by Daoutis, Coradeschi, and Loutfi is the selected best paper from the 2009 International Conference on Intelligent Environments (IE’09). The paper discusses the necessity of a conceptual interaction mechanism that would allow a non-expert user to operate embedded intelligent devices in smart environments. Through examining the notion of grounding perceptual information into background knowledge and establishing the required amount of background knowledge to enable communication through natural language, the paper offers a grounding approach based on commonsense knowledge. In addition to enabling queries from the human users the commonsense knowledge is used to reason about objects, their properties and functionalities.
- In “Coping with Multiple Residents in a Smart Environment”, Crandall and Cook explore the challenges associated with multiple residents in a smart environment, for example, that of attribut-

ing sensor events to different individuals. They study the use of resident identifiers as part of the data fusion and activity recognition operations, and test their findings on a smart home and a smart office testbed.

- In “Activity Recognition in the Home using a Hierarchical Framework with Object Usage Data”, Naeem and Bigham employ RFID-tagged objects to monitor daily activities of the elderly and develop a behaviour model for the user which can aid in early detection of Alzheimer’s disease when certain functional orders are detected as novel and abnormal events.
- In “Experiences from Interaction Design for NFC Applications”, Ailisto, Isomursu, Tuikka and Juha Häikiö discuss a set of applications relying on a touch-based user interface, and offer a framework for combining user’s explicit intentions expressed by touching a ‘tag’ and the information or services available at the tagged object or location. The various experiments discussed provide hints on the opportunities for implementing the concept of physical browsing which aims to bridge the physical and digital worlds.

4. Upcoming Events

The last pages of each issue include announcements for upcoming events in related areas of research.