

Preface

Hamid Aghajan^a, Andrea Prati^b, Carles Gomez^c and Juan Carlos Augusto^d

^a *imec, IPI, Department of Telecommunications and Information Processing, Ghent University, Ghent, Belgium*

^b *Department of Information Engineering, University of Parma, Parma, Italy*

^c *Wireless Networks Group, Department of Network Engineering, Universitat Politecnica de Catalunya, Spain*

^d *Research Group on Development of Intelligent Environments, Middlesex University, London, UK*

1. This issue

This issue of JAISE is composed of eight papers. The review process for the papers in this issue was supervised by our editors Boris De Ruyter, Achilles Kameas, Irene Mavrommati, Alex Mihailidis, Dimitris Charitos, Caifeng Shan, Evan Magill, Andres Muñoz Ortega, and Carles Gomez, whom we thank for their service. The back pages of this issue include a PhD thesis report.

Location-based social networks are becoming a widespread platform for understanding user behaviour and providing pervasive services in intelligent environments. Presence of fake users in these networks can undermine the validity of user analytics and lower the value of the applications and services intended for real users. The paper “**An empirical approach for fake user detection in location-based social networks**” by Melia-Segui et al. proposes a fake user detection method based on classifiers trained on different user features. The paper reports on experiments with mining a large Foursquare dataset and related Twitter accounts, and demonstrates the effectiveness of the proposed technique on classifying fake users.

Pervasive user devices such as mobile phones have become a key part of everyday life, enabling users to always be connected to the information. These devices do also call for the user’s attention frequently through notifications about incoming messages, emails, news, and other events. A challenge of the mobile computing systems is hence regulating the request for user’s attention. This can be done by taking into account the degree to which each service may be intrusive to the user’s activity. The paper “**Self-adaptive unobtrusive interactions of mobile computing systems**” by Gil and Pelechano introduces adaptive methods for providing non-disturbing interactions. The paper discusses

a software infrastructure that automatically adapts the service interaction’s obtrusiveness level according to the user’s context.

Intelligent buildings require various types of sensors and systems to function simultaneously and provide various services. The ever increasing complexity of the devices operated by heterogeneous systems have created challenges for smooth operation of smart buildings as unpredicted behaviour or decision deadlocks may cause conflicts which can lead to system failure. The paper “**Sustainability in intelligent building environments using weighted priority scheduling algorithm**” by Shahi et al. proposes a decision making model with a weighted priority scheduling algorithm to resolve the conflicts to achieve efficient and sustainable communication response among heterogeneous systems.

Stroke survivors often have difficulties performing activities of daily living. When trying to complete a task, they tend to rely on caregivers who give them cues when necessary. However, this reliance on caregiver support may affect their ability to live independently. The paper “**Intelligent prompting system to assist stroke survivors**” by Jean-Baptiste et al. proposes an assistive system named CogWatch which provides guidance to the user for making tea as a case study. The system observes the user performing the intended sequence of functions for completing the task, and intervenes to offer cues when necessary to assist the user.

As more applications are being introduced as smart home solutions, many important issues are still unexplored. Among these are compatibility and co-existence issues between the different systems, as well as the flexibility that these systems need to possess in order to modify their operation as the needs of the user evolve in time. The paper “**Private assisted house for**

smart living” by Corradini et al. proposes a highly configurable integration platform for smart homes. The platform supports the coordination of home automation services, tele-care solutions, and smart objects. It addresses compatibility issues and enables the system to combine different vendor solutions.

Navigating through real-world environments poses a real challenge for the visually impaired individuals. Various attempts have been reported on using the available RGB-D (color-depth) cameras with scene description algorithms to offer the visually impaired users a navigation assistance tool. The existing RGB-D imaging systems have been mainly designed for gaming applications and hence, their operating range starts at a sizable distance from the user. As such, these devices cannot offer useful data about the immediate proximity of a walking person, a necessity for an assistive navigation solution. The paper “**IR stereo RealSense: Decreasing minimum range of navigational assistance for visually impaired individuals**” by Yang et al. proposes a system composed of two sensors and the required processing algorithms to provide an operation range suitable for navigation support applications.

Multimodal systems represent a new class of interaction tools capable of interpreting information from various sensory and communication channels. They use a richer and more natural way of communication with the user by using inputs such as speech and gesture. Human-computer interaction systems use multimodal fusion techniques to interpret the combined input modalities. In addition, the resulting actions need to be subdivided into elementary sub-tasks for being performed by actuators through a process which is sometimes called fission. The paper “**Fusion and fission engine for an assistant robot using an ontology knowledge base**” by Djaid et al. proposes a multimodal system that is composed of fusion and fission engines that take into account the contextual information of the user. The fusion engine combines various input modalities to determine the overall context of a given situation, and yields the situation that needs

action. This action is handled by the fission engine, where it is subdivided into smaller tasks that are sent to actuators, gadgets and other output modalities for implementation.

Providers of smart environment services to the elderly often face the challenge of their service not being used by the user as the elderly usually find it difficult to adopt new technologies. A smart environment solution for elders need to make all attempts to render the technology components of the service invisible, in the sense that the elderly users would not need to change their habits to take advantage of the service. The paper “**Delivering elder-care environments utilizing TV-channel based mechanisms**” by Amaxilatis et al. proposes to use TV channels as the interaction outlet with the user for a variety of modern web services. Different channels are hence associated with services such as health status, family photo collection, weekly schedule, notifications, and reminders. The paper also reports the results of a survey on the perspective of caregivers towards the importance, usefulness, and priority of the various smart home technologies and services.

2. Upcoming issues

The following is the list of upcoming issues of JAISE:

- January 2018: Regular Issue.
- March 2018: Regular Issue.
- May 2018: Thematic Issue based on papers from “*Intelligent Environments 2017*”.
- July 2018: Regular Issue.
- September 2018: Thematic Issue on “*IoT for personal or mobile Health*”.
- November 2018: Regular Issue.

More information on the call for papers to the future thematic issues is available on the webpage of JAISE at: <http://www.iospress.nl/journal/journal-of-ambient-intelligence-and-smart-environments/>.