Preface

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1. This issue

This issue of JAISE is composed of four papers. The review process for the papers in this issue was supervised by our editors Wilfried Philips, George Roussos, Michel Vacher, and Anthony Fleury, whom we thank for their service. The last pages of this issue include a PhD defense exam report.

Activity and behaviour monitoring of elderly inhabitants plays an essential role in an ambient environment. Ambient Assisted Living (AAL) systems have been mainly proposed for two application domains: smart homes and smart health. The success of these systems primarily hinges on controlled and well-defined activities and conduct. However, in real-world scenarios, this is difficult to accomplish and requires more sophisticated strategies. The paper "**Sensor-Based Activity Recognition in the Context of Ambient Assisted Living Systems: A Review**" by Patel and Shah presents a thorough review of different activity and behaviour analysis methods in order to identify critical challenges attributed to the AALs. The paper offers a comprehensive guide for selecting the best approaches and practices for these applications and provides a better understanding of existing problems and a direction for future research.

Available smart AAL solutions and their pervasiveness raise security challenges requiring more flexible and better adapted characteristics. However, most existing solutions are often described in the literature without any reference to their authentication or access control functions. The paper "**SoTRAACE for smart security in Ambient Assisted Living**" by Ferreira et al. describes a Socio-Technical Risk-Adaptable Access Control model, designed to better adapt the user's access control needs to each AAL security context. The proposed model takes into account contextual, tech-

nological and user's interaction profile functionalities, and performs a quantitative and qualitative risk assessment analysis to support a secure, private and usable way to access and display information.

Rapid technical developments in areas such as natural human-computer interaction (HCI), sensor technologies, and motion capture techniques have offered gesture-based interaction opportunities to serve applications in virtual and augmented reality, mobile computing, children games, and robotics. Freehand gesture-based interactions can potentially deliver natural and intuitive human-computer interaction techniques. The paper "**Beyond Remote Control: Exploring Natural Gesture Inputs for Smart TV System**" by Wu et al. explores natural gesture inputs for television users by proposing a set of 19 user-defined freehand gestures for regular TV control tasks. The paper then proposes a framework for addressing specific problems in a complex real-world TV viewing environment such as exclusion of unattended daily gestures. The framework supports recognition of static gestures as well as continuous recognition of dynamic gestures in the air.

Technological advances in microelectronics and wireless communications have enabled the development of the so-called Low-power and Lossy Networks (LLN), including Wireless Sensor and Actuator Networks (WSAN). The small nodes of these networks serve as essential elements in a sensing and communication infrastructure for smart environment applications. Smart homes, smart agriculture, and green smart cities are example applications for the WSAN networks. A widely adopted solution among the techniques used to increase the energy efficiency of a large-scale WSAN is clustering. Clustering divides the network of nodes into partitions controlled by an elected leader node, called cluster head. A drawback of tra-

ditional cluster head election mechanisms is that they wait for a cluster head's death to then elect a new cluster head. This reactive behaviour may cause holes in the network during its operation. The paper "**PALES: a Predictive Approach for the election of semantic cluster LEaders in wireless Sensor networks**" by Rocha et al. proposes a method for predictive election of semantic collectors. The method extends an existing decentralized semantic clustering mechanism, inheriting its properties of self-reconfiguration and self-adaptation through a collaborative process, while offering energy savings in the operation of WSANs.

2. Upcoming issues

The following is the list of upcoming issues of JAISE:

- September 2019: Regular Issue
- November 2019: Regular Issue
- January 2020: Thematic Issue on "Cognitive Learning-based IoT Systems"
- March 2020: Regular Issue
- May 2020: Thematic Issue on "Selected Papers from Intelligent Environments 2019"
- July 2020: Regular Issue
- September 2020: Thematic Issue on "Human Autonomous Devices for Rehabilitation and Assistance"

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