Preface

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This is the 6th and final issue of JAISE in 2012. With this issue, JAISE completes its fourth year of publication. As awareness and interest in topics related to the areas of AmI and SmE has significantly picked up over the past few years, we are witnessing a corresponding increase in the number of manuscripts submitted to JAISE. At the start of 2012 we increased the number of issues published each year from four to six, and maintained the practice of alternating regular issues with thematic issues. While regular issues offer coverage of broad topics in the field, thematic issues are designed to provide snapshots of the latest developments in specific areas within the wide span of related topics to AmI and SmE. The current issue is a regular issue and consists of four articles. Review of these articles were supervised by our associate editors Davy Preuveneers, Reiner Wichert, Michael Lew, and Edmund Lam, whom we thank for their work. The back pages of this issue contain the list of reviewers who have contributed to JAISE over the past four years.

1. This issue

A smart environment is a physical space where smart applications that are executed locally or globally interact in order to achieve intelligence to fulfill an emerging need of users. The heterogeneity and complexity of computing, communication, and software technologies pose challenges in establishing real smart environment scenarios. The dynamic nature of smart environments, with evolving systems or changing user requirements, calls for the ability of the applications to react and even anticipate changes that will happen inside and outside of the application execution platform. The reaction should be based on detection of changes, interpretation of any new requirements, and incorporation of any new information about the situation. Hence, interoperability is becoming a requirement at different levels such as connectivity of devices, data collection and fusion, the semantics of data, contextual information, detection of changes in context, and application's behavior. The paper **"Situation-Based and Self-Adaptive Applications for the Smart Environment"** by Pantsar-Syväniemi et al. proposes a reusable adaptation framework for developing situation-based applications for smart environments. The framework defines an architecture, generic ontologies for context, security, and performance management, and dynamic models for performing run-time reasoning and adaptation. The framework is intended to assist application developers in creating application scenarios and transforming the scenarios into annotated sequence diagrams with the help of the static models of the framework, the ontologies, and the rules defined in them.

Life events at older age have the potential to drastically change the social circle of affected people. It may be difficult to find new social contacts when one has never got used to seeking such contacts. Loneliness has many negative effects for well-being, including depression and even cardiovascular disease. The Ambient Assisted Living Joint Programme (AAL-JP) research project V2me seeks to find a solution for alleviating loneliness by means of easy-to-use technology including touch screen devices. The idea is to use a virtual coach for encouraging users to take an active role in contacting people and teaching them how to initiate and maintain meaningful and enduring relations. The first step, in the process of creating the complete virtual coach-assisted system for preventing loneliness, is to create a prototype and use the feedback from older users for developing the system. The paper **"V2me: Evaluating the First Steps in Mobile Friendship Coaching"** by Muuraiskangas et al. reports on the progress made within the V2me project on the first pilot program, and sketches the plan ahead based on the obtained results.

Analyzing human pose and gesture has become an essential part of many smart environment applications in gaming, automation, gesture control, and for general HCI applications. While the topic has been extensively examined by researchers in the computer vision discipline over the past several decades, the introduction of the Kinect depth sensor and the availability of software tools to support extraction of real-time data from it has enabled novel approaches to estimating the pose of users for a subset of the named applications. The paper **"Human Limb Segmentation in Depth Maps based on Spatio-Temporal Graph Cuts Optimization"** by Hernández-Vela et al. examines the use of depth sensors along with spatio-temporal graph cuts theory to develop a segmentation method for analyzing human limbs.

Robots can in principle play a role in some AmI and SmE systems as they combine sensory functions with mobility, and offer various means for interfacing with the user. In order to enable robots to automatically and flexibly utilize service resources in intelligent environments, different component-based middleware systems have been introduced. These systems are designed to manage the components and their communications using specific interfaces that operate predefined functions. The paper **"Flexible Ambient Service Discovery and Composition for Component-based Robotic System"** by Qian et al. proposes a new service composition approach based on a hierarchical service model that accommodates for automatic semantic service discovery. The paper argues that developing service robots that are capable of discovering and flexibly utilizing ambient intelligence for supporting their task can lead to novel modular robotic systems that can provide human-aware and socially-acceptable competencies for assisting the elderly.

2. Upcoming issues

Moving forward to 2013, JAISE will keep the tradition of alternating Thematic Issues with Regular Issues. Hence, the issue to be published in January 2013 will be a Thematic Issue focused on *Context-Aware Systems*, and that is followed by a regular issue in March, and a Thematic Issue in May on *Agents*.

More information on the call for papers to the future thematic issues is available on the webpage of JAISE at: http://jaise-journal.org/.

3. Upcoming events

As usual for an area active like AmI there are interesting events around the world. The last pages of each issue of JAISE provide information on some interesting upcoming events as well as related thesis reports.