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Introduction to the thematic issue

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1. Introduction

This thematic issue is focused on the Design and Deployment of Intelligent Environments. The proper design of IEs is of paramount importance, given the complexity of IEs and the need to satsify user needs while addressing tradeoffs between quality, cost, efficiency, usability and reliability. The actual deployment and evaluation of IEs is also a significant challenge, since these systems normally involve the use of multiple, often novel, technologies, multiple points of failure, and diverse users.

The topic clearly was demeed relevant and timely, as we received 38 submissions for this special issue of which six papers were selected for publication, after a torough review process.

2. In this thematic issue

The article "Similarity awareness: using context sensing to support connectedness in intra-family communication" by Dadlani et al. addresses the notion of similarity awareness as a means to enhance connectedness between remote family members. The authors design and evaluate MatchMaker, an application that targets the need of young adults that have left home and their parents (empty nesters). A preliminary evalution of MatchMaker found strong indications that similarity awareness can enhance social connectedness.

Atif Manoor et al. analize the importance of body motion and arm motion action primitives to recognice high-level human actitivies. In the article "Analyzing the impact of different action primitives in designing high-level human activity recognition systems" the authors report that the body motion action primitives and arms motion action primitives can play a fundamental role on recognizing human activities, specifically those that do not involve interaction with the objects and the environment.

The contribution from Stephen Czarnuch et al. entitled "A real-world deployment of the COACH prompting system" presents the results of a four-month deployment of the COACH system, an Assistive Technology for Cognition (ATC) to support older adults with dementia during hand washing. The COACH system was configured to interact with users when they were not progressing through the task. Findings from the study are used to identify improvements to the design of the system.

Following, Ozgur Kafali et al., with the article "COMMODITY12: A Smart e-Health Environment for Diabetes Management", present in detail the design of a Personal Health System to assist in the provision of continuos and personalised health services to diabetic patients. COMMODITY12 is a wearable device which acquire, monitor and communicate physiological parameters and health-related context of an individual. Intelligent agents process this data giving important insight about the individual's health status.

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The article "Modeling individual healthy behavior using home automation sensor data: Results from a field trial" by Enno-Edzard Steen et al. presents a technical system for unobtrusive presence measurement and two novel models for describing user behaviour in domestic environments. This system was installed in two flats of older adults during a field trial for eight months. It was found that both models (timeslot-based and duration-based) can be applied to describe user behaviour. A detailed discussion about the influence of data structures and model quality on the detection of anomalies and generation of alarms is included.

A general purpose Augmented Reality system is presented in the article "Fast Vision-Based Scene Modelling for Augmented Reality in Unprepared Man-made Environments" by Javier Flavio Vigueras-Gomez et al. The authors propose a system that allows to easily add 3D computer generated objects into real man-made environments. This system allows to augment simple rooms or urban scenes with virtual imagery.

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