

Call for papers

Journal of Ambient Intelligence and Smart Environments
Thematic Issue on Computational Modeling of Human-Oriented Knowledge within Ambient Intelligence

Recent developments within Ambient Intelligence (AmI) provide new possibilities to contribute to personal care. For example, our car may monitor us and warn us when we are falling asleep while driving. Similarly, the workspace of a technical worker may monitor the person's stress level, and provide support in case it is too high. As another example, an elderly person may wear a device that monitors his or her well-being and generates an action when a dangerous situation is noticed. While such AmI applications can be initially based on the acquisition and fusion of sensory information, more intelligent applications need to depend on the availability of an adequate knowledge base for the analysis of human functioning. In recent years, scientific areas such as cognitive science, psychology, neuroscience and biomedical sciences have made substantial progress in providing increased insight in the physical and mental aspects of human functioning. Although much work still remains to be done, models have been developed for a variety of such aspects and the way in which humans (try to) manage or regulate them. From a biomedical angle, examples of such aspects are (management of) heart functioning, diabetes, and eating regulation disorders. From a psychological and social angle, examples are emotion regulation, attention regulation, addiction management, trust management, stress management, and criminal behavior management. If models of human processes and their management are represented in a formal and computational format, and incorporated in the human environment, then AmI applications are able to perform a more in-depth analysis of the human's functioning. This special issue addresses computational modeling of human-oriented knowledge from disciplines such as psychology, social science, neuroscience and biomedical sciences, and the role such models may play for Ambient Intelligence. We shall consider high quality papers reporting original research results on topics that include, but are not limited to:

- Human-aware computing
- Computational modeling of cognitive, neurological, social and biomedical processes for AmI
- Affective computing related to human-environment interaction
- Formal models of personalities, emotions and moods within ambient systems
- Emotion regulation and coping models within ambient systems
- Emotion recognition approaches, such as speech recognition, natural language processing, or facial expression detection
- Mindreading or theory of mind models and their application in AmI
- Computational modeling of a person's stress and workload, attention, or situational awareness
- Modeling of social norms and skills for AmI applications
- Using ambient systems to model and analyze social interactions
- Building profiles; user modeling in AmI
- Preference modeling in AmI
- Cognitive agent models and their application in AmI
- Analysis and design of applications to care for humans in need of medical support
- Analysis and design of applications to support humans in demanding tasks

1. Submission procedure

Paper submission must follow the procedure at <http://www.mstracker.com/submit1.php?jc=jaise>. In their submission cover letter, authors should highlight that the submission is for this particular special issue. Prospective authors are encouraged to contact the special issue editors in advance, indicating their interest and a tentative title of the paper.

2. Important dates

Deadline for Manuscript Submission: July 1, 2009

First Reviews and Decision: September 21, 2009

Final Accepted Manuscript: November 9, 2009

Targeted Publication Date: January 2010

3. Guest editors

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