

# Preface

Pervasive, context-aware computing technologies are essential drivers of next generation applications and appliances that will profoundly impact the way we work and play, conduct research, impart education, govern ourselves and care for our health.

In order to support context-aware applications and achieve multidevice interoperability, it is important to develop an effective framework and representation language(s) for capturing and representing activity and context information, reasoning about the information and moving such information across devices in a secure and efficient manner. The development of such a framework and associated techniques and languages remains an open and challenging problem.

The second workshop at AAAI-12 on Activity Context Representation: Techniques and Languages was organized to consolidate and build on the successes from the first workshop at AAAI-11 to address this challenge. Our intent was as follows:

First, discuss and review existing and novel Activity Context Representation and Exchange Languages. This included identification of use cases, list of domain-specific instantiations and proposals for initial reasoning schemes and algorithms. Discuss results from creation of solution architectures and proposals for languages, data structures, operations to enable top use-case categories.

Second, discuss papers and proposals for new research areas and review work building on key research themes with specific opportunities for collaborative work in the next two-three years in this academically and commercially important area, with topics including, but not limited to semantic computing, task modeling, context representation, and activity recognition.

Third, create and support a core research group, identify new collaborations, and formalize an international academic and industrial consortium to significantly augment existing standards, drafts, and proposals and create fresh initiatives to enable capture, transfer, and recall of activity context across multiple devices and platforms used by people individually and collectively. Create an adoption plan addressing likely barriers such as critical mass, privacy, not-invented-here and implementation complexity. This workshop has attracted the attention of researchers working at the intersection of HCI / CSCW and AI to lay the groundwork for techniques to represent context within activity models to reduce demands on people, such as the cognitive load inherent in activity and context switching, and enhancing human and device performance.

The papers and proposals in this technical report explore the capture, representation, standardization and interoperability of activity and context models, especially in the context of creating context-aware and activity-based assistive cognition tools. The topics covered by the papers and proposals include, but are not limited to activity context aware systems, activity modeling, representation, detection; context capture and representation within activities; creation of ontologies.

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