

Preface

Computing in context has become a necessity in modern intelligent IT applications. Context is now more than just location. It is seen as a multi-dimensional space of environmental aspects, even including non-physical facets such as emotions. Hence, models for representing context have evolved from using simple key-value pairs to using current methods and techniques derived from artificial intelligence and knowledge management, e.g., logic, object relationship models, and ontologies.

Context and context-awareness are crucial not only for mobile and ubiquitous computing, but span various application areas: collaborative software and web engineering, personal digital assistants and peer-to-peer information sharing, health care workflow and patient control, adaptive games and e-Learning solutions. In all these areas, context serves as a major source for reasoning, decision-making, and adaptation, as it covers not only application knowledge but also environmental knowledge.

With the introduction of intelligent systems and automation, other needs arise for IT applications which are important for the systems' users and may be solved or supported by applying context. A crucial one is the understandability of an IT system, for explaining how solutions are found, what the system is doing, and why it operates a certain way. Applied methods and given advice have to be explained, so that the user can understand the process and agree on decisions. Another vital feature is to provide uncertain or blurred information, e.g., when using a tracking system in situations where either revealing the current position or denying access to it would spoil the activity.

Appropriate context management methods are an important prerequisite for using contextual information. Advanced models, methods, and tools are needed to provide mechanisms and techniques for structured storage of contextual information, to provide effective ways to retrieve it, and to enable integration of context and application knowledge.

With the use of mobile devices and current research on ubiquitous computing, the topic of context-awareness is a major issue for future IT applications. Modeling and retrieving context provides means to be integrated in modern knowledge management processes. Intelligent solutions are needed to apply context, e.g., to cope with the fuzziness of contextual information and, especially, because of mobility, with rapidly changing environments and unsteady information sources. Advanced methodologies for determining or assigning a context to a situation are required, which brings the need for Artificial Intelligence mechanisms in context-aware applications.

This second installment of the MRC workshop series on modeling and retrieval of context reflected substantial interest and activity in this area, with nearly twice as many submissions as MRC 2004. Special thanks go to the program committee and additional reviewers, for their efforts and hard work in the reviewing and selection process. Further, we thank all the authors who submitted articles to the workshop to make this program possible.

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