

# AI Moves to IA: Workshop on Artificial Intelligence, Information Access, and Mobile Computing

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## Preface

Artificial Intelligence (AI) and Information Access (IA) have always been strongly interlinked fields. AI techniques have been profitably used to implement advanced IA systems, and the huge amount of information available through the Web discloses new possibilities to AI researchers. In recent years, a new ingredient has been added: the increasing availability of smaller and more pervasive computing devices has brought to the attention of AI and IA research on context awareness, ubiquitous computing, ambient intelligence, interaction with mobile devices, and embedded computing. We refer to all these fields as Mobile Computing (MC) for short.

On the one hand, these rapidly growing fields will greatly benefit from past AI research on their own. In fact, the new devices already embed a good deal of intelligence that can (and has to) be exploited to allow a more efficient and usable user interaction. Moreover, MC faces the difficult problem of dealing with the real physical world out there, and AI has been struggling with interaction with the physical world for decades. Perception, vision, and robotics are probably the most known AI sub-areas that dealt with this issue, but it is often claimed that AI systems can play chess like a master whereas they have the perception and interaction capabilities of an insect. Therefore, AI research can fruitfully inspire the MC emerging field on both achievements and difficulties. Similarly, IA research in such areas as retrieval, filtering and presentation of text and other media has both strong results which could be adapted to the MC situation, and which can help in understanding the difficulties inherent in IA in the MC environment.

On the other hand, the interplay of AI and IA needs to adapt to the new MC scenario, in which the need for information becomes an even more fundamental human need. We already have evidence of IA importance today, since after messaging (email, instant messaging, SMS,

MMS, and so on), the search for information is the second most frequent activity of both Web users and mobile device users. Moreover, it is easy to envisage scenarios in which people seek information by using different kinds of devices, in different environmental situations, and different time constraints. Finally, information will continuously be pushed to one's own devices depending on the current location, interests, activities, etc.: we hardly know today, what information overload is. AI techniques (like user modeling, context modeling, intelligent assistants, to mention just a few) seem necessary for IA systems capable of dealing in an effective way with the enormous amount of information that will be coming to MC devices; how such techniques can best be implemented in an MC environment is a very open issue. Again, the same can be said of IA techniques, which have been developed in stable, relatively static environments.

This workshop is an initial attempt to identify the problems inherent in the IA in MC situation, discuss how previous research results in all three areas might address these problems, and present some proposed solutions to the problems. The nature of the enterprise is such that the papers are necessarily rather heterogeneous. Nevertheless, we have tried to group them into five general thematic areas: intelligent mobile devices; the use of profiles in mobile devices; identification and treatment of services in the mobile environment; general techniques which could be applied to the MC situation; and, general theoretical and methodological issues which will be significant in applying AI to IA in MC (we couldn't resist the string of acronyms, for which we beg your forgiveness).

We wish to convey our thanks to the Program Committee and to all of the other referees who helped us in selecting and commenting upon the papers presented in these proceedings, and to the organizers of IJCA '03 for their help in making this workshop possible.

Pekka Ala-Siuru, Nicholas J. Belkin, Oscar Mayora-Ibarra, Stefano Mizzaro

The Organizing Committee

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