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# Principles of Practice in Multi-Agent Systems

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# Preface

Agents are software processes that perceive and act in an environment, processing their perceptions to make intelligent decisions about actions to achieve their goals. Multi-agent systems have multiple agents that work in the same environment to achieve either joint or conflicting goals. Agent computing and technology is an exciting, emerging paradigm expected to play a key role in many society-changing practices from disaster response to manufacturing to agriculture. Agent and multi-agent researchers are focused on building working systems that bring together a broad range of technical areas from market theory to software engineering to user interfaces. Agent systems are expected to operate in real-world environments, with all the challenges complex environments present.

After 11 successful PRIMA workshops/conferences (Pacific-Rim International Conference/Workshop on Multi-Agents), PRIMA became a new conference titled “International Conference on Principles of Practice in Multi-Agent Systems” in 2009. With over 100 submissions, an acceptance rate for full papers of 25% and 50% for posters, a demonstration session, an industry track, a RoboCup competition and workshops and tutorials, PRIMA has become an important venue for multi-agent research. Papers submitted are from all parts of the world, though with a higher representation of Pacific Rim countries than other major multi-agent research forums. This volume presents 34 high-quality and exciting technical papers on multimedia research and an additional 18 poster papers that give brief views on exciting research.

In 2009, the specific theme of the conference was on practical systems. Multi-agent systems show great promise for changing and improving the way complex goals are achieved in the real world, but despite many years of research this promise remains largely unrealized. By focusing this conference on practical aspects of multi-agent systems, we hope to encourage work that allows the promise to be realized. Papers on topics such as participatory simulation, practical auctions, ontology building and framework evaluation move us towards this goal.

To improve the focus on practical systems, PRIMA 2009 included two special tracks that encouraged particularly practical papers. The industrial track encouraged descriptions of systems that are either being built in industry or for real industrial problems. The multimedia track gave authors an opportunity to present their research in a multimedia format, if they believed this provided a better way of exhibiting the research contribution of their work. The 11 papers from these tracks, in this volume, represent particularly practical and exciting work.

December 2009

Jung-Jin Yang  
Makoto Yokoo  
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