From: Proceedings of the First International Conference on Multiagent Systems. Copyright © 1995, AAAI (www.aaai.org). All rights reserved.

Proceedings of the First International Conference on Multiagent Systems

Victor Lesser, Conference Chair

Preface

The First International Conference on Multi-Agent Systems is a joint effort of the North American distributed artificial intelligence (DAI) community, the Japanese multi-agent and cooperative computing (MACC) community, and the European modeling autonomous agents in a multi-agent world (MAAMAW) community. This conference was initiated as a result of the growing recognition of the importance of multi-agent systems and architectures to fundamental issues in computer science and to the development of commercial network applications.

Multi-agent systems are computational systems in which several semi-autonomous agents interact or work together to perform some set of tasks or satisfy some set of goals. These systems may involve computational agents that are homogeneous or heterogeneous, they may involve activity on the part of agents having common goals or goals that are distinct, and they may involve participation on the part of humans and intelligent computational agents. Research and practice on these systems generally focus on problem solving, communication, and coordination aspects, as distinct from low-level parallelization or synchronization issues that are more the focus of distributed computing.

The design, implementation, and assessment of multi-agent systems raises many specific issues. These include how to develop coordination strategies that enable groups of agents to solve problems effectively, negotiation mechanisms that serve to bring a collection of agents to an acceptable state, conflict detection and resolution strategies, protocols by which agents may communicate and reason about inter-agent communications, and mechanisms whereby agents can maintain autonomy while still contributing to overall system effectiveness. Topics of interests that will be the focus of conference papers include:

- Agent architectures
- Artificial life (from a multi-agent perspective)
- Believable agents
- Cooperation, coordination, and conflict
- Communication issues

From: Proceedings of the First International Conference on Multiagent Systems. Copyright © 1995, AAAI (www.aaai.org). All rights reserved.

- Conceptual and theoretical foundations of multi-agent systems
- Development and engineering methodologies
- Distributed artificial intelligence
- Distributed consensus and algorithms for multi-agent interaction
- Distributed search
- Evaluation of multi-agent systems
- Integrated testbeds and development environments
- Intelligent agents in enterprise integration systems and similar types of applications
- Learning and adaptation in multi-agent systems
- Multi-agent cooperative reasoning from distributed heterogeneous databases
- Multi-agent planning and planning for multi-agent worlds
- Negotiation strategies--in both competitive and cooperative situations
- Organization, organizational knowledge, and organization self-design
- Practical applications of multi-agent systems (enterprises, robotics, sensing, manufacturing, IVHS etc.)
- Resource allocation in multi-agent systems
- Social structures and their significance in multi-agent systems
- User interface issues for multi-agent systems

The papers selected for the conference proceedings were highly reviewed with an acceptance rate of 33% and present a very good cross section of the state of the art in multi-agent systems. We hope that as a result of reading the proceedings you will share with us the intellectual excitement and interest in this emerging discipline. Finally, we would like to acknowledge the support and encouragement of AAAI, IJCAI, ACSIOM, Inc., Keihanna Interaction Plaza, Inc. and ECCAI in helping us getting this new conference started.

– *Victor R. Lesser,* General Chair

– *Susan Conry, Yves Demazeau, & Mario Tokoro,*
Program Cochairs