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# Call for Papers: Special Issue on Computational Logic in Multi-Agent Systems in Annals of Mathematics and Artificial Intelligence

Special Issue Editors:

Jürgen Dix (The University of Manchester, UK)

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<http://centria.di.fct.unl.pt/~jleite/amai03/>

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## ABOUT THE SPECIAL ISSUE

Multi-agent systems (MAS) have become an increasingly important area of research, not least because of the advances in the Internet and Robotics. However multi-agent systems can become very complicated, and, consequently, reasoning about the behaviour of such systems can become extremely difficult. Therefore, it is important to be able to formalise multi-agent systems and, to do so in such a way that allows automated reasoning about agents' behaviour. The purpose of this Special Issue is to present techniques, based on computational logic (CL), for reasoning about multi-agent systems in a formal way. This is clearly a major and exciting challenge for computational logic. We have to develop techniques to deal with real world issues and applications. We solicit papers that address CL-related formal approaches to multi-agent systems. The approaches as well as being formal must make a significant contribution to the practice of multi-agent systems. Relevant techniques include the following (but are not limited to):

- Nonmonotonic reasoning in MAS
- Planning in MAS
- Adaptability and learning in MAS
- Knowledge representation in MAS
- Temporal reasoning in MAS
- Negotiation, co-operation, competition and communication in MAS
- Verification of MAS
- Decision theory for MAS
- Distributed problem solving in MAS
- Significant applications of MAS

## SUBMISSION DETAILS

We are expecting full papers to describe original, previously unpublished research, be written in English, and not be simultaneously submitted for publication elsewhere (previous publication of partial results at workshops with informal proceedings is allowed).

Papers should be formatted according to the Instructions for AMAI submissions

(<http://www.kluweronline.com/issn/1012-2443>)

and should be between 20 and 40 pages long:

We also require the following issues to be addressed:

- CL: An introduction that includes statements about how the paper addresses the exploitation of CL for MAS;
- MAS: An explanation of which aspect/functionality of MAS

the paper formalises;

- Examples: Example(s) which give an intuitive motivation and explanation of the formalisation.

Please submit a PostScript or PDF file of your paper to [dix@cs.man.ac.uk](mailto:dix@cs.man.ac.uk) by the 1st of October 2002.

## IMPORTANT DATES

- Submission Deadline: October 1, 2002
- Author Notification: December 15, 2002
- Final Paper Deadline: February 15, 2003
- Special Issue: September 2003

## ABOUT THE SPECIAL ISSUE EDITORS

• Jürgen Dix is a Reader at The University of Manchester, UK. He is also member of the CS Department at the Technical University of Vienna, where he is lecturing regularly. He worked since 1989 in several areas of Computational Logic (nonmonotonic reasoning, logic programming, deductive databases, knowledge representation) and, lately, also in Multi-Agent Reasoning.

• João Alexandre Leite is a researcher at the Center for Artificial Intelligence (CENTRIA), New University of Lisbon, Portugal. He has been doing research on logic programming and non-monotonic reasoning, with particular emphasis on the problem of representing and reasoning about dynamic knowledge, and its application to multi-agent systems.

• Ken Satoh is a professor of National Institute of Informatics, Japan. He has been doing research on theoretical foundations of AI such as nonmonotonic reasoning, preference-based reasoning and case-based reasoning. He is also interested in formalization of multi-agent systems and application of the above reasoning to multi-agent systems.

## ABOUT ANNALS OF MATH AND AI

Annals of Mathematics and Artificial Intelligence (AMAI) is devoted to reporting significant contributions on the interaction of mathematical and computational techniques reflecting the evolving disciplines of artificial intelligence. Annals of Mathematics and Artificial Intelligence publishes edited volumes of original manuscripts, survey articles, monographs and well refereed conference proceedings of the highest caliber within this increasingly important field. All papers will be subject to the peer reviewing process with at least two referees per paper.