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Matteo Baldoni
Tran Cao Son
M. Birna van Riemsdijk
Michael Winikoff (Eds.)

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Revised Selected and Invited Papers

Series Editors

Randy Goebel, University of Alberta, Edmonton, Canada
Jörg Siekmann, University of Saarland, Saarbrücken, Germany
Wolfgang Wahlster, DFKI and University of Saarland, Saarbrücken, Germany

Volume Editors

Matteo Baldoni
Università di Torino
Dipartimento di Informatica
Via Pessinetto 12, 10149 Turin, Italy
E-mail: baldoni@di.unito.it

Tran Cao Son
New Mexico State University
Department of Computer Science
P.O. Box 30001, MSC CS, Las Cruces, NM 88003, USA
E-mail: tson@cs.nmsu.edu

M. Birna van Riemsdijk
Delft University of Technology
Mekelweg 4, 2628 CD Delft, The Netherlands
E-mail: m.b.vanriemsdijk@tudelft.nl

Michael Winikoff
University of Otago
Higher Education Development Centre
P.O. Box 56, Dunedin, New Zealand
E-mail: michael.winikoff@otago.ac.nz

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Preface

The workshop on Declarative Agent Languages and Technologies (DALT), in its *sixth edition* this year, is a well-established forum for researchers interested in sharing their experiences in combining declarative and formal approaches with aspects of engineering and technology of agents and multiagent systems.

DALT 2008 was held as a satellite workshop of AAMAS 2008, the 7th International Joint Conference on Autonomous Agents and Multiagent Systems, in Estoril, Portugal. Following the success of DALT 2003 in Melbourne (LNAI 2990), DALT 2004 in New York (LNAI 3476), DALT 2005 in Utrecht (LNAI 3904), DALT 2006 in Hakodate (LNAI 4327), and DALT 2007 in Honolulu (LNAI 4897), the workshop again provided a discussion forum to both (a) support the transfer of declarative paradigms and techniques to the broader community of agent researchers and practitioners, and (b) to bring the issue of designing complex agent systems to the attention of researchers working on declarative languages and technologies.

The aim of the DALT workshop is to stimulate research on formal and declarative approaches both for developing the foundations of multiagent systems as well as for all phases of engineering multiagent systems, i.e., for specification and modeling, for implementation, and for verification. By providing a forum for the presentation of ideas addressing both of these aspects, DALT encourages the integration of formal and declarative techniques and methods that are based on solid theoretical foundations in the engineering of multiagent systems.

Recent advances in the area of computational logic provide a strong foundation for declarative languages and technologies, increasingly allowing agents to be endowed with mechanisms for behaving flexibly and autonomously in open and dynamic environments. In this setting, it becomes more and more important that multiagent systems are engineered to ensure both adaptability *and* a certain level of predictability. While providing a certain level of predictability is important for any software, it is especially important for multiagent systems in which the agents are autonomous and adaptive. Formal and declarative technologies both for specification and verification as well as for implementation are arguably the most promising approach to providing this required predictability. Ensuring a certain level of predictability is important for the adoption of multiagent technology in practice, as users have to trust a multiagent system to behave as required even though the agents are autonomous and adaptive.

An ongoing challenge for the DALT community is the investigation of formal and declarative techniques for the specification and implementation of rational agents. Moreover, techniques for structuring a multiagent system and for facilitating cooperation among agents such as organizational views of agent systems, norms, teams, coordination mechanisms, and argumentation and negotiation techniques are becoming increasingly important and are challenges for the

DALT community. Further, there are several areas that have commonalities with multiagent systems and to which declarative agent languages and technologies can be applied, such as the Semantic Web, service-oriented systems, component-based systems, security, and electronic contracting.

There is thus an ongoing and even increasing demand for formal and declarative approaches for the development of multiagent systems. In this volume, we report on the latest results in this area, including papers on logical foundations, declarative programming approaches, and verification of multiagent systems. The DALT workshop received 24 submissions. Each paper was reviewed by at least 3 reviewers, and 14 papers were accepted: 10 as full papers, and 4 as short papers. Out of these 14 contributed articles that were selected for presentation at the workshop, 12 papers were selected by the Program Committee for publication in this volume, as well as three invited articles, originally presented as short papers at AAMAS 2008, that have been extended by their authors.

We would like to thank all authors for their contributions, the members of the Steering Committee for their valuable suggestions and support, and the members of the Program Committee for their excellent work during the reviewing phase.

November 2008

Matteo Baldoni
Tran Cao Son
M. Birna van Riemsdijk
Michael Winikoff

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