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Preface

We are delighted to present you with the revised, selected and invited papers of the eighth edition of the International Workshop on Declarative Agent Languages and Technologies (DALT 2010), a well-established forum to foster discussion and sharing of experiences among researchers interested in declarative approaches and technologies for software agents and multi-agent systems.

DALT 2010 was held as a satellite workshop of the 9th International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS 2010), in Toronto, Canada, and it took place on May 10. Previous editions were held in 2003 in Melbourne, Australia; in 2004 in New York, USA; in 2005 in Utrecht, The Netherlands; in 2006 in Hakodate, Japan; in 2007 in Honolulu, USA; in 2008 in Estoril, Portugal; and in 2009 in Budapest, Hungary. All these past editions had their proceedings published in the *Lecture Notes in Artificial Intelligence* series as volumes 2990, 3476, 3904, 4327, 4897, 5397, and 5948, respectively.

Declarative approaches provide simpler and more natural means to connect theory with practical computing aspects. Algebras, logics and functions, to name a few, have been used as declarative formalisms, with which (together with their associated mechanisms) one can specify, verify, program and analyze computational systems. The well-understood mathematical underpinnings of declarative approaches provide clean, solid and natural means to bridge the gap between theory and practice, providing formalisms, tools and techniques to support the development of applications.

Declarative approaches offer useful abstractions to study computational phenomena, which are necessarily more compact than procedural accounts. Software agents and multi-agent systems have been pursued as means to realizing a new generation of very large-scale, distributed information systems. Declarative approaches to agent languages and technologies raise many fresh challenges with exciting prospects for agent programming, communication languages, reasoning and decision-making. The many challenges include, for instance, which formal foundations to use, how pragmatic concerns are addressed formally, how expressive approaches are, and so on.

DALT aims to make formal methods and declarative technologies and approaches available to and understood by a broader segment of the multi-agent research community. Another objective is to foster the application of theoretical results to the implementation of working systems. These issues are being addressed by DALT by providing 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) bring the issue of designing and verifying complex agent systems to the attention of researchers working on declarative languages and technologies. DALT has been of particular interest to multi-agent system researchers who are working in computational logic and formal methods

in general. It has also been of great interest to researchers and practitioners applying these methods to particular applications such as service-oriented and grid computing. It has been of general interest to researchers interested in linking agent theory to concrete applications.

This volume contains 11 contributed articles selected by the Program Committee. The 2010 edition of the DALT workshop received 24 submissions, and these were reviewed by at least 3 reviewers, with 10 papers being accepted for presentation at the workshop. After the event, the authors of all accepted papers were invited to submit revised and extended versions of their papers, incorporating feedback and discussions from their presentations, and another round of reviews took place, leading to eight papers being accepted for inclusion in the present proceedings. We also invited authors of short papers presented at AAMAS 2010, and which addressed topics relevant to DALT, to submit extended versions of their papers. Figure 1 shows a "word cloud" with the 100 most frequently occurring terms found in the articles of this volume[1].

Fig. 1. Word Cloud for DALT 2010 Papers

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 phases. We would also like to thank Dave S. Robertson (School of Informatics, The University of Edinburgh, Edinburgh, UK), for his thought-provoking invited talk "Coordination as Practical Logic Programming."

December 2010

Andrea Omicini
Sebastian Sardina
Wamberto Vasconcelos

[1] The diagram was prepared using IBM's Word Cloud generator (`http://www.alphaworks.ibm.com/tech/wordcloud`) and the sizes of words reflect their frequency in the articles.

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