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# PRIMA 2015: Principles and Practice of Multi-Agent Systems

18th International Conference  
Bertinoro, Italy, October 26–30, 2015  
Proceedings

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# Preface

Welcome to the proceedings of the 18th International Conference on Principles and Practice of Multi-Agent Systems (PRIMA 2015) held in Bertinoro, Italy, during October 26–30, 2015.

Originally started as a regional (Asia-Pacific) workshop in 1998, PRIMA has become one of the leading and influential scientific conferences for research on multi-agent systems. Each year, PRIMA brings together active researchers, developers and practitioners from both academia and industry to showcase, share and promote research in several domains, ranging from foundations of agent theory and engineering aspects of agent systems, to emerging interdisciplinary areas of agent-based research.

The 2015 edition was a very special one, because this was the very first time that PRIMA was brought to Europe since it emerged as a full-fledged international conference in 2009. Previous successful editions were held in Nagoya, Japan (2009), Kolkata, India (2010), Wollongong, Australia (2011), Kuching, Malaysia (2012), Dunedin, New Zealand (2013), and Gold Coast, Australia (2014).

We received 94 submissions from 30 countries. Each submission was carefully reviewed by at least three members of the Program Committee (PC) composed of 184 prominent world-level researchers and 27 additional reviewers. The review period was followed by PC discussions moderated by Senior Program Committee (SPC) members. The PRIMA SPC has been part of the PRIMA reviewing scheme since 2010, and this year it included 22 members. At the end of the reviewing process, in addition to the technical reviews, each paper received a summary meta-review by an SPC member. The PC and SPC included researchers from 139 institutions located in 33 countries world-wide.

Of the 94 submissions, PRIMA 2015 accepted 29 papers, with an acceptance rate of 31 %. In addition, 24 contributions were accepted as promising, but not fully mature early innovation papers. All papers were presented at the conference. Each paper was also invited to display a poster so as to enable further discussion. In addition to paper presentations and poster sessions, the conference itself also included three workshops, two tutorials, three keynote talks, and a demo session.

We nominated three papers for the PRIMA 2015 Best Paper Award:

- “Verification of Asynchronous Mobile-Robots in Partially-Known Environments”, by Sasha Rubin, Florian Zuleger, Aniello Murano, and Benjamin Aminof
- “Potential of Heterogeneity in Collective Behaviors: a Case Study on Heterogeneous Swarms”, by Daniela Kengyel, Heiko Hamann, Payam Zahadat, Gerald Radspieler, Franz Wotawa and Thomas Schmickl
- “Designing a Source-Level Debugger for Cognitive Agent Programs”, by Vincent Koeman and Koen Hindriks

Authors of selected papers were invited to submit extended versions of their work to several scientific journals, to further the impact of PRIMA 2015 via special issues and fast tracks. A special issue of *Fundamenta Informaticae* will be devoted to more theoretical work, whereas one by the *Knowledge Engineering Review* will focus on emerging perspectives in the PRIMA scope. Finally, the *Journal of Autonomous Agents and Multi-Agent Systems* will fast-track the processing of extended PRIMA best papers.

We would like to thank all individuals, institutions, and sponsors that supported PRIMA 2015. Mainly we thank the conference delegates and the authors, who answered our call for papers by submitting state-of-the-art research papers from all over the world, confirming the role that PRIMA has gained as a leading international conference in multi-agent system research. Without them, none of this would have been possible. We also thank EasyChair for the use of their conference management system, which allowed us to handle the reviewing process of a conference of this size, from the early stages until the production of the present volume.

We are indebted to our PC and SPC members and additional reviewers for spending their valuable time by providing careful reviews and recommendations on the submissions, and for taking part in follow-up discussions. We are proud that all PRIMA submissions received informative and constructive feedback. We nominated three PC members for the PRIMA 2015 Best PC Member Award: Michael Winikoff, Stéphane Airiau, and Fabio Paglieri; and three SPC members for the PRIMA 2015 Best SPC Member Award: Rafael Bordini, Yves Demazeau, and Tony Bastin Roy Savarimuthu. A special mention was made of additional reviewers Chiara Bassetti, Dave De Jonge, and Fuyuki Ishikawa for providing very thorough and insightful reviews.

Special thanks to some individuals who have consistently supported this conference, in particular the senior advisors of PRIMA 2015, Aditya Ghose, Guido Governatori, and Makoto Yokoo, and the staff members and students of the Università di Bologna's Department of Computer Science and Engineering (DISI), especially Marco Prandini, Enrico Denti, and Stefano Mariani for their efforts in the local and financial organization and management of the website: <http://prima2015.apice.unibo.it>. We also thank the workshop and tutorial chairs, Matteo Baldoni, Mohammad Namazi, and Cristina Baroglio, the conference secretariat in Bertinoro, in particular Roberta Partisani and Michela Schiavi, Editorial Director Alfred Hofmann, and Editors-in-Chief Damian Niwinski, Peter McBurney, Simon Parsons, Peter Stone, and Carles Sierra. Last but not least, special thanks for to the wonderful invited talks given by Marc Cavazza, Michael Mäs, and Franco Zambonelli.

Finally, we are very grateful to the sponsors who supported PRIMA financially, making the conference accessible to a larger number of delegates, and supporting the participation of keynote speakers:

- The Bertinoro Centre for Informatics, <http://bici.eu>
- The Università di Bologna's Department of Computer Science and Engineering, <http://disi.unibo.it>

- The European Coordinating Committee for Artificial Intelligence, <http://eccai.org>
- Springer's *Lecture Notes in Computer Science*, <http://springer.com/computer/lncs>

We hope you enjoy the proceedings!

August 2015

Qingliang Chen  
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