

Chairs' Welcome

The Autonomous Agents and Multiagent Systems (AAMAS) conference series gathers researchers from around the world to share the latest advances in the field. It is the premier forum for research in the theory and practice of autonomous agents and multiagent systems. AAMAS 2002, the first of the series, was held in Bologna, followed by Melbourne (2003), New York (2004), Utrecht (2005), Hakodate (2006), Honolulu (2007), Estoril (2008), Budapest (2009), Toronto (2010), Taipei (2011), Valencia (2012), Saint Paul (2013), Paris (2014), Istanbul (2015), Singapore (2016), São Paulo (2017) and Stockholm (2018). This volume is the proceedings of AAMAS 2019, the 18th conference in the series, held in Montreal in May 2019.

AAMAS 2019 invited submissions for a general track and six special tracks: Robotics, Socially Interactive Agents, Engineering Multiagent Systems, Blue Sky Ideas, and Industrial Applications, along with a track to present papers from JAAMAS (the journal Autonomous Agents and Multi-Agent Systems) that had not previously been presented at a major conference. The special tracks were chaired by leading researchers in their fields: Joydeep Biswas and Mohan Sridharan chaired the Robotics track, Ana Paiva and David Sarne the Socially Interactive Agents track, Amal El Fallah Seghrouchni and Michael Winikoff the Engineering Multiagent Systems track, Catholijn Jonker the Blue Sky Ideas track, and Bo An and Yoram Bachrach the Industrial Applications track. Kagan Tumer solicited papers for the JAAMAS Presentation Track from the papers that appeared in JAAMAS within the preceding 12 months.

A group of Area Chairs (AC) was selected to help oversee the review process of the main track. Jointly with the program chairs, the special track chairs and area chairs were responsible for appointing Senior Program Committee (SPC) members, who in turn helped identify a strong and diverse set of Program Committee (PC) members for their tracks. Every paper was reviewed by at least three PC members, overseen by an SPC member who ensured reviews were clear and informative. After authors were given an opportunity to respond to the reviewers, the SPC member led a discussion where the reviewers considered each others', and the authors', comments. The track chairs and area chairs in turn worked with the program chairs to make final decisions about acceptance for the papers, to ensure uniformly high quality.

AAMAS 2019 attracted a good number of high-quality submissions: the overall acceptance rate for full papers was 24.3% (193 out of 793 submissions were accepted). A breakdown of the acceptances by track is as follows:

<i>Track</i>	<i>Reviewed</i>	<i>Full Paper</i>		<i>Extended Abstract</i>	
Main	581	140	24%	145	25%
Robotics	82	17	20%	21	25%
Socially Interactive Agents	48	17	35%	8	16.6%
Engineering Multiagent Systems	38	10	26%	9	23%
Industrial Applications	29	4	13%	6	20%
Blue Sky Ideas	15	5	33%	-	-

The top 20% of accepted papers from each track were nominated for a fast track review process at JAAMAS for authors interested in submitting a longer journal article describing their work.

The eight JAAMAS extended abstracts were reviewed by the track chair.

While all the accepted papers are of very high quality, a selected few papers from the main track were nominated for the Best Paper Award and the Pragnesh Jay Modi Best Student Paper Award. The Best Paper Award was presented at the conference to the best paper, and the Pragnesh Jay Modi Best Student Paper Award was given to the best of the remaining papers primarily authored by a student. The Best Student Paper Award was sponsored by Springer. The nominees for these awards are listed below, alphabetically by the first author's last name; papers primarily authored by a student are marked with an asterisk (*). These papers were also nominated for fast track review at the Journal of Artificial Intelligence Research (JAIR).

James Bailey, Georgios Piliouras

Multiagent Learning in Network Zero-Sum Games is a Hamiltonian System

Giuseppe Cuccu, Julian Togelius, Philippe Cudré-Mauroux

Playing Atari with Six Neurons

Piotr Faliszewski, Nimrod Talmon, Markus Brill, Frank Sommer

Approximation Algorithms for BalancedCC Multiwinner Rules

* Hongyao Ma, Reshef Meir, David Parkes, James Zou

Contingent Payment Mechanisms for Resource Utilization

* Jingyan Wang, Nihar Shah

Your 2 is My 1, Your 3 is My 9: Handling Arbitrary Miscalibrations in Ratings

The Robotics, Socially Interactive Agents, Engineering Multiagent Systems and Industrial Applications tracks also presented best paper awards nominees.

The following paper was nominated from the Robotics track:

* Mattias Appelgren, Alex Lascarides

Learning Plans by Acquiring Grounded Linguistic Meanings from Corrections

The following paper was nominated from the Socially Interactive Agents track:

* Kim Baraka, Marta Couto, Francisco Melo, Manuela Veloso

An optimization approach for structured agent-based provider/receiver tasks

The following paper was nominated from the Engineering Multiagent Systems track:

Parantapa Bhattacharya, Christian Lebiere, Samarth Swarup, Saliya Ekanayake, Chris Kuhlman, Don Morrison, Mandy Wilson, Mark Orr

The Matrix: An Agent-Based Modeling Framework for Data Intensive Simulations

The following paper was nominated from the Industrial Applications track:

Sebastien Blandin, Laura Wynter, Basile Dura

FASTER: Fusion AnalyticS for public Transport Event Response

In addition, the IFAAMAS Influential Paper award was presented at the conference for the following two papers:

Bernstein, D. S., Zilberstein, S., & Immerman, N.

The complexity of decentralized control of Markov decision processes.

In Proceedings of the Sixteenth conference on Uncertainty in Artificial Intelligence, June 2000, pages 32-37

Bernstein, D. S., Givan, R., Immerman, N., & Zilberstein, S.
The complexity of decentralized control of Markov decision processes.
Mathematics of Operations Research, 27(4), 2002, pages 819-840

Papers were presented orally in 15 minute slots; all extended abstracts and full papers were presented as posters during the conference. Each session of full paper talks was followed by a 30-minute poster session for the presented papers, and the extended abstracts posters were presented in two separate poster sessions.

These proceedings also contain the extended abstracts of 22 Demonstrations, and 22 submissions accepted to the Doctoral Consortium, as well as abstracts of the invited talks and details of some of the awards presented.

The keynote speakers for AAMAS were Subbarao Kambhampati (Arizona State University), Doina Precup (McGill University and DeepMind), and Francesca Rossi (IBM Research). The ACM SIGAI Autonomous Agents Research Award talk was delivered by Carles Sierra (IIIA-CSIC), and Fernando P. Santos (Ph.D at University of Lisbon 2018) gave the Victor Lesser Dissertation Award presentation.

We would like to thank the authors for submitting a large number of top quality papers and the track chairs, area chairs, SPC members, PC members, and a host of additional reviewers for their dedication in evaluating the submissions and for engaging in all the technical discussions held during the reviewing process. We also thank Frans Oliehoek for arranging these conference proceedings, Thomas Preuss for providing Confmaster technical support, Blai Bonet for assisting with the paper matching process, Faryed Eltayesh for designing and maintaining the conference website, as well as Jamal Bentahar, Jia Yuan Yu, Jessica Dahbi and all the local arrangements assistants for organizing the venue and the social program.

Finally, we also would like to thank the whole AAMAS 2019 organization team for their work in making AAMAS 2019 a rich and exciting event; in addition to the main conference, demonstrations, and Doctoral Consortium program captured in these proceedings, there was also a tutorial program and a workshop program.

Edith Elkind and Manuela Veloso
AAMAS'19 General Chairs

Noa Agmon and Matthew E. Taylor
AAMAS'19 Program Chairs