

Alessio Lomuscio

Relevant Previous Work and Arguments for Candidacy to the IFAAMAS Board

Alessio Lomuscio is Professor in Logic for Multi-Agent Systems in the Department of Computing at Imperial College London (UK) where he leads the Verification of Autonomous Systems research group. He currently holds a Leadership Fellowship from EPSRC, the UK Engineering Research Council. He has been working in the field of autonomous agents and multi-agent systems since the mid 90s and has published over 100 publications stretching back to the ATAL workshop series where he published his first paper in 1996.

His research has mainly been concerned with the development of logic-based techniques for the specification and verification of MAS. Specifically, he is known for his work with colleagues on symbolic model checking for autonomous systems, an area he was instrumental in launching around 2002. He is co-author of MCMAS, a leading BDD-based open-source model checker for MAS, which has been used in a variety of applications including autonomous under water vehicles, agent-based web-services and security protocols. Together with collaborators in his group and elsewhere he has developed a repertoire of techniques for the efficient validation of agent-based systems including abstraction, partial-order reduction, symmetry reduction, and SAT-based and parallel approaches.

He is also known for his theoretical contributions to temporal-epistemic logics at propositional and quantified setting, including studies solving the decidability, complexity and completeness of several epistemic logics of interest in MAS and information security. Before 2000 he also contributed to deontic logic by developing (with Sergot) the formalism of deontic interpreted system, which was influential in later literature on MAS compliance and norms. With Jennings and Wooldridge he also worked on automated negotiation for multi-agent systems in 1999; one of the papers resulting from this line of work has so far received over 1100 citations. He has applied verification techniques with industrial partners in a wide-range of scenarios from network protocols (BT), to web-services (Fujitsu, IBM), autonomous robots (UK Oceanographic Centre), and others.

Alessio has given several day lectures at various editions of the European Agent Systems Summer School, the European Summer School on Logic, Language and Information, and various invited talks at workshops at conferences. He is on the steering committee of the MoChart (Model Checking and AI) and Deon (Deontic Logic in Computer Science) workshop Series; between 2004 and 2006 he was on the steering committee of the LCMAS workshop series on logical aspects of communication.

He has published 27 papers in international journals, including in the AIJ and JAAMAS and over 70 research papers in international conferences, including 15 full papers and 7 short papers at AAMAS since 2002, and a number of full papers at IJCAI, ECAI, and KR. He is passionate about bringing ideas from the agent community to other areas in computer science and engineering. He regularly publishes in other thematic conferences, including the highly-related conference series TACAS and CAV (verification), ICSOC (services), ICWS (web-services), and TARK (rationality and knowledge).

Alessio is an editorial board member of the journal of Artificial Intelligence Research. He has served as PC or SPC member of AAMAS for all editions since 2002 and is regularly PC member for ECAI, AAAI, KR, and IJCAI. Since 2000 he has served on the PC for approximately 80 events. As an example in 2012 he is serving as PC member for AAAMAS, ECAI, AAAI (SPC), KR, and PRIMA (SPC).