Editorial Foreword

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Published online: 21 February 2020
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Logical aspects of multi-agent systems (LAMAS) is a relatively young and actively developing area of interdisciplinary research on logical systems and methods for modelling, specification, analysis, and reasoning about multi-agent systems. This special issue was initially conceived as a post-proceedings volume of the 8th Workshop on Logical Aspects of Multi-Agent Systems (LAMAS 2017), which took place on August 25, 2017 in Stockholm, Sweden, co-organized by us as an affiliated event of the 26th EACSL Annual Conference on Computer Science Logic CSL'2017. The special issue, however, developed in its own direction, focusing on 2 special LAMAS-related topics: *logics for social networks* (3 contributions) and *logics for multi-agent probabilistic reasoning* (1 contribution). Here is a summary of these contributions:

- The paper “*Group Conformity in Social Networks*” by Colby Morrison and Pavel Naumov deals with diffusion in social networks, which results from agents’ tendencies to conform to the behaviour of their peers. The authors promote the use of the “propositional opinion diffusion model” to model an agent’s conformity to different social groups to which that agent belongs. The main technical contribution is a sound and complete logical system, extending Armstrong’s axioms for functional dependency to capture the properties of the influence relation in that model.
- In “*A closeness- and priority-based logical study of social network creation*” Sonja Smets and Fernando Raymundo Velázquez Quesada study logical aspects of network formation in social network model, focusing on the notions of closeness and weighted closeness between agents (in terms of the number of traits they have in common). The main technical result is a sound and complete axiom system formalising reasoning about update operations of social networks, using ideas and techniques from dynamic epistemic logic.

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- The paper “*On the Logic of Balance in Social Networks*” by Zuojun Xiong and Thomas Ågotnes is devoted to logics for reasoning about social networks, too. The authors propose a modal logic for reasoning about structural properties of signed social networks, and provide a sound and complete Hilbert-style axiomatic system for it and for some natural extensions, capturing the logically valid principles of some special classes of networks, including general and balanced networks.
- In “*Multi-agent Logics for Reasoning About Higher-Order Upper and Lower Probabilities*” Dragan Doder, Nenad Savic and Zoran Ognjanovic present propositional and first-order logics for reasoning about higher-order upper and lower probabilities, which generalize some existing probability logics. The authors provide sound and complete axiomatizations for these logics and prove decidability in the propositional case.

We hope that the reader will find this special issue not only to be a valuable contribution to the specific topics covered in it, but also as a good illustration and testimonial of the potential of applying logical methods to the formalization of, and reasoning about, important aspects of multi-agent systems.

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