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Andrea Aler Tubella · Stephen Cranefield ·
Christopher Frantz · Felipe Meneguzzi ·
Wamberto Vasconcelos (Eds.)

Coordination, Organizations, Institutions, Norms, and Ethics for Governance of Multi-Agent Systems XIII

International Workshops COIN 2017 and COINE 2020
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Revised Selected Papers

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Editors
Andrea Aler Tubella
Umeå University
Umeå, Sweden

Christopher Frantz
Norwegian University of Science and Technology (NTNU)
Gjøvik, Norway

Wamberto Vasconcelos
University of Aberdeen
Aberdeen, UK

Stephen Cranefield
University of Otago
Dunedin, New Zealand

Felipe Meneguzzi
Pontifical Catholic University of Rio Grande do Sul
Porto Alegre, Brazil

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Preface

This volume collates selected revised papers presented at the 2017 edition of the Coordination, Organization, Institutions, and Norms Workshop (COIN), co-located with the International Conference on Autonomous Agents and Multiagent Systems (AAMAS) in Sao Paulo, Brazil, as well as papers from the 2020 edition of the workshop, likewise co-located with AAMAS in Auckland, New Zealand – held virtually due to the pandemic situation. Reflecting novel topic foci of researchers and scholars interested in the theoretical and empirical evaluation of technologies for the presentation and analysis of the coordination of social behaviour, the workshop has been relabelled as Coordination, Organization, Institutions, Norms, and Ethics for Governance of Multi-Agent Systems (COINE). This modification specifically responds to the focus on governance of social systems as the overarching theme of the COINE workshop series, and therein the explicit consideration of ethical aspects.

Submissions to both the 2017 and 2020 editions of the workshop underwent two rounds of blind peer review. Full versions of all papers underwent reviews by at least three reviewers, with an initial assessment as part of the admission to the presentation, and a second round in which the authors had the opportunity to refine and extend the previously submitted version based on feedback received as part of the reviews and the presentations.

The 2017 edition of the COIN workshop received ten submissions, of which five were accepted for presentation and three as posters. Out of those, two papers were refined and submitted as part of this volume. The 2020 edition of the COINE workshop received ten submissions, out of which eight were accepted for presentation, subsequently refined, and included in this post-proceedings volume.

While distributed over two editions of the workshop, the proceedings organise the workshop papers into three themes, namely empirical applications of COINE technologies, followed by papers with a focus on convention emergence, as well as establishment and optimisation of social metrics. The final theme focuses on conceptual frameworks and architectures that embed behaviour coordination from a socio-normative perspective as well as the characterisation of social constructs more generally.

Empirical Applications of COINE Technologies

The papers in this section address the application of COINE-related technology with specific focus on normative behaviour. Doing so, the papers draw on real-world datasets and selectively focus on the detection of norms, as well as detecting their violation or conflicts.

- *Norm Conflict Identification using a Convolutional Neural Network* by Aires and Meneguzzi applies a combination of traditional machine learning techniques and

convolutional neural networks in order to automate conflict detection in legal text, with specific focus on a large-scale contract dataset – for which the authors showcase promising results.
- *Norm violation in online communities – A study of Stack Overflow comments* by Cheriyan et al. proposes an approach to automate the detection of intentional or unintentional norm violation in Stack Overflow comments in order to automatically identify and flag comments for moderation, or to indicate potential violations to authors themselves – thereby alleviating the spread of hate speech and other forms of inappropriate expression.
- *Mining International Political Norms from the GDELT Database* by Murali et al. applies Bayesian norm mining to identify political norms as expressed by linked international events documented in the GDELT news database – showcasing the potential of norm mining techniques over conventional probabilistic discrete-event models in institutional settings.
- *Developers' responses to app review feedback — A study of communication norms in app development* by Savarimuthu et al. describes a large-scale study of developer responses to app reviews for popular applications in the Android app ecosystem. The authors identify a set of norms distributed over three general categories that can serve as a basis to develop recommendation systems to support developers when interacting with users or by automating the generation of responses.

Emergence & Social Metrics

The second group of papers focuses on the themes of emergence as well as estimation and optimisation of COINE concepts, including values, norms and general social metrics.

- *Convention Emergence in Partially Observable Topologies* by Marchant and Griffiths explores approaches to promoting efficient norm emergence by strategic placement of influencing agents in topologies. As a central contribution, the authors propose a learning algorithm that is able to identify preferable locations in a topology based on a finite number of observations.
- *Improving Confidence in the Estimation of Values and Norms* by Calvacante Siebert et al. proposes an approach to improve the confidence of artificial agents to estimate values and norms of human agents in the context of an ultimatum game setting. The work identifies two promising methods that can be variably applied in a scenario-dependent manner.
- *Should I tear down this wall? Optimizing social metrics by evaluating novel actions* by Kramar et al. investigates the potential of learning linkages between behavioural trajectories and environmental circumstances in order to assess the impact of modifications in an agent society's physical environment on social metrics at large.

Conceptual Frameworks & Architectures

The final section of the proceedings is dedicated to approaches that emphasise the architectural dimension of normative agents, as well as laying out the fundamental relationships between different social coordination concepts.

- *Impact of different belief facets on agents' decisions – a refined cognitive architecture to model the interaction between organisations' institutional characteristics and agents' behaviour* by Afshar Sedigh et al. draws linkages between the Belief-Desire-Intentions agent architecture and social-psychological theories, with specific focus on the Theory of Planned Behaviour. The paper explores the impact of individual weightings based on different personal characteristics on behavioural outcomes, making theoretically discussed concepts, such as cognitive dissonance, overt.
- *A Norm Emergence Framework for Normative MAS – Position Paper* by Martin-Morris et al. discusses directions toward a novel norm synthesis process that drives norm emergence based on dedicated synthesiser agents that further accommodate intentional norm change based on participant agreement as well as validation by an artificial external authority.
- *Social rules for agent systems* by Mellema et al. provides an overview of social concepts, such as social practices, norms and conventions – as relevant for COINE technologies – and identifies their conceptual relationships. This work aims at providing a basis for the integrated discussion and analysis of associated dynamics.

In addition to the contributions by the authors of the 2017 and 2020 editions of (now) COINE, we gratefully acknowledge the programme committee members for both workshops, who are listed after this preface, and the guidance offered by the COIN(E) Champions.

February 2021

Andrea Aler Tubella
Stephen Cranefield
Christopher Frantz
Felipe Meneguzzi
Wamberto Vasconcelos

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