Logical Methods in Computer Science
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# PREFACE

This volume contains selected papers presented at the 43rd IFIP WG 6.1 International Conference on Formal Techniques for Distributed Objects, Components, and Systems (FORTE 2023) and the 25th International Conference on Coordination Models and Languages (COORDINATION 2023). The conferences were held as two of three main conferences of the 18th International Federated Conference on Distributed Computing Techniques (DisCoTec 2023) during June 19-23, 2023, hosted by NOVA University Lisbon, Portugal.

FORTE is a well-established forum for fundamental research on theory, models, tools, and applications for distributed systems, with special interest in:

- Language concepts for concurrency and distribution, supported by rigorous semantics, well-supported pragmatics, and/or expressive illustrative use-cases.
- Analyses techniques, methodologies, and/or algorithms, using testing and/or verification, to validate (aspects of) the soundness of various types of concurrent and distributed systems, including communication and network protocols, service-oriented systems, adaptive distributed systems, cyber-physical systems and sensor networks.
- Principles for qualitative and quantitative security analysis of distributed systems.
- Applications of formal methods and techniques for studying the quality, reliability, availability, and safety of concrete distributed systems. We are specially interested in "real-life" case studies and industrial applications involving real distributed systems.
- Emerging challenges and hot topics in distributed systems (broadly construed), such as software-defined networks, distributed ledgers, smart contracts, and blockchain technologies, etc.

COORDINATION is a well-established forum for the community of researchers interested in models, languages, architectures, and implementation techniques for coordination, with a special interest in:

- Theoretical models and foundations for coordination: component composition, concurrency, mobility, dynamic, spatial and probabilistic aspects of coordination, logic, emergent behaviour, types, semantics.
- Specification, refinement, and analysis of architectures: patterns and styles, verification of functional and non-functional properties, including performance and security aspects.
- Dynamic software architectures: distributed mobile code, configuration, reconfiguration, networked computing, parallel, high-performance and cloud computing;
- Nature- and bio-inspired approaches to coordination;

All articles have already been published in the regular issues of Logical Methods in Computer Science.

- Coordination of multi-agent and collective systems: models, languages, infrastructures, self-adaptation, self-organisation, distributed solving, collective intelligence and emerging behaviour.
- Coordination and modern distributed computing: web services, peer-to-peer networks, grid computing, context-awareness, ubiquitous computing, mobile computing;
- Coordination platforms for infrastructures of emergent new application domains like IoT, fog- and edge-computing.
- Cybersecurity aspects of coordinated systems, coordinated approaches to cybersecurity.
- Programming methodologies, languages, middleware, tools, and environments for the development and verification of coordinated applications.
- Tools, languages and methodologies for secure coordination.
- Industrial relevance of coordination and software architectures: programming in the large, domain-specific software architectures and coordination models, case studies.
- Interdisciplinary aspects of coordination.
- Industry-led efforts in coordination and case studies.

This special issue features seven articles:

- Hernán Melgratti, Claudio Antares Mezzina, G. Michele Pinna. Relating Reversible Petri Nets and Reversible Event Structures, categorically.
- Gianluca Aguzzi, Roberto Casadei, Mirko Viroli. MacroSwarm: A Field-based Compositional Framework for Swarm Programming.
- Jonah Pears, Laura Bocchi, Maurizio Murgia, Andy King. Timeout Asynchronous Session Types: Safe Asynchronous Mixed-Choice For Timed Interactions.
- Giorgio Audrito, Roberto Casadei, Ferruccio Damiani, Gianluca Torta, Mirko Viroli. Programming Distributed Collective Processes in the eXchange Calculus.
- Petra van den Bos, Marielle Stoelinga. With a little help from your friends: semi-cooperative games via Joker moves.
- Andrea Esposito, Alessandro Aldini, Marco Bernardo, Sabina Rossi. Noninterference Analysis of Reversible Systems: An Approach Based on Branching Bisimilarity.
- Claudio Antares Mezzina, Francesco Tiezzi, Nobuko Yoshida. Checkpoint-based rollback recovery in session programming.

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