

23rd International Conference on Principles of Distributed Systems

OPODIS 2019, December 17–19, 2019, Neuchâtel, Switzerland

Edited by

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■ Preface

The papers in this volume were presented at the 23rd International Conference on Principles of Distributed Systems (OPODIS 2019), held on December 17–19, 2019, in Neuchâtel, Switzerland. The conference was organized by the University of Neuchâtel and took place at the Faculty of Sciences.

OPODIS is an open forum for the exchange of state-of-the-art knowledge about distributed computing. With strong roots in the theory of distributed systems, OPODIS has expanded its scope to cover the whole range between the theoretical aspects and practical implementations of distributed systems, as well as experimentation and quantitative assessments. All aspects of distributed systems are within the scope of OPODIS: theory, specification, design, performance, and system building. Specifically, this year, the topics of interest at OPODIS included:

- Biological distributed algorithms
- Blockchain technology and theory
- Communication networks
- Cloud computing and data centers
- Dependable distributed algorithms and systems
- Design and analysis of concurrent and distributed data structures
- Design and analysis of distributed graph algorithms
- Distributed deployments of machine learning
- Distributed event processing
- Distributed operating systems, middleware, and distributed database systems
- Distributed storage and file systems, large-scale systems, and big data analytics
- Edge computing
- Embedded and energy-efficient distributed systems
- Game-theory and economical aspects of distributed computing
- High-performance, cluster, cloud and grid computing
- Impossibility results for distributed computing
- Internet of things and cyber-physical systems
- Mesh and ad-hoc networks networks
- Mobile agents, robots, and rendezvous
- Programming languages, formal methods, specification and verification
- Randomization in distributed computing
- Security and privacy, cryptographic protocols
- Self-stabilization, self-organization, autonomy
- Shared memory algorithms
- Social systems, peer-to-peer and overlay networks
- Specification and verification of distributed systems
- Synchronization
- Transactional memory

We received 87 submissions, each of which underwent a double-blind peer review by at least three members of the Program Committee with the help of external reviewers. Overall, the quality of the submissions was very high. From the 87 submissions, 32 papers were selected to be included in these proceedings.

The OPODIS proceedings appear in the Leibniz International Proceedings in Informatics (LIPIcs) series. LIPIcs proceedings are available online and free of charge to readers. The production costs are paid in part from the conference budget. The review process was done using EasyChair.

Two Best Paper Awards were given: one award was given to Nikita Koval, Dan Alistarh, and Alexander Federov for their paper titled “In Search of the Fastest Concurrent Union-Find Algorithm”, and the other award was given to Kfir Lev-Ari, Alexander Spiegelman, Idit Keidar, and Dahlia Malkhi for their paper titled “FairLedger: A Fair Blockchain Protocol for Financial Institutions”. The Best Student Paper Award was given to Yasamin Nazari for their paper titled “Massively Parallel Approximate Distance Sketches”, co-authored with Michael Dinitz.

This year OPODIS had three distinguished invited keynote speakers: Haris Pozidis (IBM Research), Keren Censor-Hillel (Technion), and Rachid Guerraoui (EPFL).

Thank you to all the authors that submitted their work to OPODIS. We are also grateful to the Program Committee members for their hard work reviewing papers and their active participation in the online discussions and the Program Committee meeting. We also thank the external reviewers for their help with the reviewing process.

Organizing this event would not have been possible without the time and the effort of the Organizing Committee, notably: Valerio Schiavoni, who was responsible for local arrangements and the website; Peter Kropf, who managed sponsorships; and Avery Miller, who managed the proceedings.

Finally, we thank the Steering Committee members for their valuable advice, as well as the sponsors and the University of Neuchâtel for their support.

December 2019

Pascal Felber (University of Neuchâtel, Switzerland)

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