

26th International Conference on Principles of Distributed Systems

OPODIS 2022, December 13–15, 2022, Brussels, Belgium

Edited by

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■ Preface

The papers in this volume were presented at the 26th International Conference on Principles of Distributed Systems (OPODIS 2022), held on December 13–15, 2022 in Brussels, Belgium. 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 entire range between the theoretical aspects and practical implementations of distributed systems, as well as experimental 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:

- Distributed systems, theory and practice
- Blockchain, theory and practice
- Cloud and data centers
- Communication and mobile networks
- Parallelism, concurrency, and multicore systems
- Shared and transactional memory, memory management
- Dependable systems, system security
- Distributed graph algorithms
- Middleware and Operating systems
- File and storage systems
- Distributed ML
- Distributed data analytics
- Mobile agents and robots
- Self-stabilizing, self-organizing and autonomous systems
- Game-theory in distributed computing

We received 76 submissions, each of which underwent a double-blind peer review process. Overall, the quality of the submissions was very high. From the 76 submissions, 25 papers were selected to be included in these proceedings. To emphasize the system side of distributed computing, this year in addition to an academic forum the program committee included representatives from 9 industrial companies. Authors of more than a quarter of the accepted papers have an industrial affiliation.

The program committee decided to honor Hagit Attiya and Faith Ellen with the OPODIS 2022 Best Paper Award for their work on “The Step Complexity of Multidimensional Approximate Agreement”. A Best Student Paper Award was presented to Ittai Abraham and Gilad Stern for their paper “New Dolev-Reischuk Lower Bounds Meet Blockchain Eclipse Attacks”. In addition, the paper “Computational Power of a Single Oblivious Mobile Agent in Two-Edge-Connected Graphs” by Taichi Inoue, Naoki Kitamura, Taisuke Izumi, and Toshimitsu Masuzawa was recognized as a runner-up for the Best Student Paper Award.

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.

This year OPODIS had three distinguished invited keynote speakers: Panagiota Fatourou (University of Crete), Victor Luchangco (Algorand), and Sébastien Tixeuil (Sorbonne University, CNRS, LIP6, Institut Universitaire de France, France). We warmly thank all the authors

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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.

The conference organization committee expresses its warmest regards to the sponsors of the conference: Input-Output (USA), Digital Wallonia and the Walchain network (Belgium), and the FNRS public research agency (Belgium). Organizing this event would not have been possible without the dedication of researchers from the Cloud and Large-Scale Computing group at UCLouvain and from support staff members of UCLouvain's computer science department. We also express our thanks to Steering Committee members for their valuable advice.

November 2022

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