

# 28th International Conference on Principles of Distributed Systems

OPODIS 2024, December 11–13, 2024, Lucca, Italy

Edited by

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#### *ACM Classification 2012*

Theory of computation → Distributed computing models; Theory of computation → Distributed algorithms; Theory of computation → Concurrent algorithms; Theory of computation → Data structures design and analysis; Networks → Mobile networks; Networks → Wireless access networks; Networks → Ad hoc networks; Computing methodologies → Distributed algorithms; Security and privacy → Distributed systems security; Information systems → Distributed storage; Computer systems organization → Dependable and fault-tolerant systems and networks; Software and its engineering → Distributed systems organizing principles

## **ISBN 978-3-95977-360-7**

#### *Published online and open access by*

Schloss Dagstuhl – Leibniz-Zentrum für Informatik GmbH, Dagstuhl Publishing, Saarbrücken/Wadern, Germany. Online available at <https://www.dagstuhl.de/dagpub/978-3-95977-360-7>.

#### *Publication date*

January, 2025

#### *Bibliographic information published by the Deutsche Nationalbibliothek*

The Deutsche Nationalbibliothek lists this publication in the Deutsche Nationalbibliografie; detailed bibliographic data are available in the Internet at <https://portal.dnb.de>.

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Digital Object Identifier: 10.4230/LIPIcs.OPODIS.2024.0

ISBN 978-3-95977-360-7

ISSN 1868-8969

<https://www.dagstuhl.de/lipics>

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**ISSN 1868-8969**

**<https://www.dagstuhl.de/lipics>**



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## ■ Preface

The papers in this volume were presented at the 28th International Conference on Principles of Distributed Systems (OPODIS 2024), held on December 11–13, 2024 in Lucca, Italy. 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 computing theory: Impossibility results in distributed computing, Game theory;
- Distributed ledger practice and theory: Blockchains, DAG consensus;
- Cloud and data centers, cloud and edge continuum;
- Communication and mobile networks;
- Parallelism, concurrency, and multicore systems;
- Shared and transactional memory, memory management, non-volatile memory;
- Dependable and secure systems;
- Distributed graph algorithms;
- Middleware and operating systems;
- File and storage systems: distributed storage, file systems and database systems;
- Distributed ML: machine learning for systems, systems for machine learning, federated learning;
- Distributed data analytics: big data analytics frameworks, data-intensive computing;
- Mobile agents and robots;
- Self-\*: self-stabilizing, self-organizing, and autonomous systems;
- Fault tolerance and consistency;
- Decentralized systems and peer-to-peer networks;
- Cyber-physical systems: IoT, smart environments.

We received 94 submissions, each of which underwent a double-blind peer review process. The submissions were reviewed by at least three Program Committee (PC) members, with the help of external reviewers, and were extensively discussed by the PC members, using the HotCRP system and an online PC meeting. In the end, 35 papers were selected to be included in these proceedings. Overall, the quality of the submissions was very high, and many interesting contributions could not be accepted due to the physical limitations of the conference.

The PC voted for selecting the best paper and best student paper in the program. The best paper award was given to “*Quit-Resistant Reliable Broadcast and Efficient Terminating Gather*” by Mose Mizrahi Erbes (ETH Zurich) and Roger Wattenhofer (ETH Zurich); and the best student paper award was given to “*Distributed Agreement in the Arrovian Framework*” by Kenan Wood (Davidson College), Hammurabi Mendes (Davidson College), and Jonad Pulaj (Davidson College).

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Leibniz International Proceedings in Informatics

Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Dagstuhl Publishing, Germany

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. We are grateful to the LIPIcs editorial staff who are truly setting a gold standard on the implementation of open access publication and in offering an smooth editorial workflow.

This year OPODIS had three distinguished invited keynote speakers: Alysson Bessani (Universidade de Lisboa, Portugal), Paola Flocchini (University of Ottawa, Canada), and Alberto Sonnino (Mysten Labs & University College London, United Kingdom). We warmly thank 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, and members of the steering committee for their trust and guidance.

Organizing this event would not have been possible without the dedication of PhD students and researchers from the Systems Security, Modeling, and Analysis (SySMA) research unit and the support of the staff members at IMT School. The conference organization committee expresses its warmest regards to IMT School, which supported the organization of the conference.

November 2024

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