

27th International Conference on Principles of Distributed Systems

OPODIS 2023, December 6–8, 2023, Tokyo, Japan

Edited by

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■ Preface

The papers in this volume were presented at the 27th International Conference on Principles of Distributed Systems (OPODIS 2023), held on December 6–8, 2023 in Tokyo, Japan.

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:

- Big data analytics frameworks
- Blockchain, theory and practice
- Cloud, grid, edge computing
- Communication and mobile networks
- Data centers
- Data-intensive computing
- Dependable and secure systems
- Distributed file systems and database systems
- Distributed graph algorithms
- Distributed recommender systems
- Distributed storage
- Distributed systems for machine learning
- Fault tolerance and consistency
- Game-theory in distributed computing
- Impossibility results in distributed computing
- IoT
- Middleware and Operating systems
- Mobile agents and robots
- Parallelism, concurrency, and multicore systems
- Self-stabilizing, self-organizing and autonomous systems
- Shared and transactional memory, memory management

We received 96 submissions, each of which underwent a double-blind peer review process except one submission retracted just after the deadline and two desk rejected due to anonymity issues. 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. In the end, 32 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 also voted for selecting the best paper and best student paper in the program. The best paper award was given to “*Fault-tolerant computing with unreliable channels*” by A. Pastoriza, G. Chockler, and A. Gotsman; and the best student paper award was given to “*Flooding with Absorption: An Efficient Protocol for Heterogeneous Bandits over Complex Networks*” by J. Lee, L. Schmid, and S. Yun.

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.

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This year OPODIS had three distinguished invited keynote speakers: Vincent Gramoli (University of Sydney and Redbelly Network), François Le Gall (Nagoya University), and Roger Wattenhofer (ETH Zurich).

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. We also thank the external reviewers for their help with the reviewing process.

Organizing this event would not have been possible without the help of the organizing committee: François Bonnet (Tokyo Institute of Technology), Yuichi Sudo (Hosei University), Mayuko Takano (Tokyo Institute of Technology), Yasumasa Tamura (Tokyo Institute of Technology).

We are also grateful for the support we received from our students at Tokyo Institute of Technology and at Hosei University: Yusuke Ichiki, Tinghong Jin, Yuuki Kin, Genta Konno, Keita Nakajima, Gimpei Nakase, Bao-Ngoc Nguyen, Justin Shetty, Ryo Yui (Tokyo Institute of Technology), and Naomasa Kohara, Kaito Takase (Hosei University).

Finally, we thank the Steering Committee members for their valuable advice and would like to express our gratitude to our sponsors, National Institute of Information and Communications Technology (NICT), Institute of Electronics, Information and Communication Engineers (IEICE), and Information Processing Society of Japan (IPSJ) for their generous support.

November 2023

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