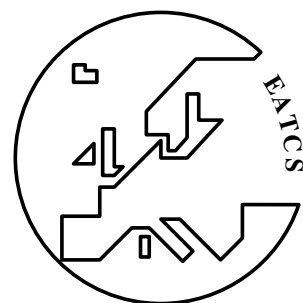


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Edited by

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■ Preface

This volume contains the papers presented at the *53rd EATCS International Conference on Automata, Languages and Programming (ICALP 2026)*, held at Royal Holloway, University of London, Egham, United Kingdom, during July 6–10, 2026. ICALP is a series of annual conferences of the *European Association for Theoretical Computer Science (EATCS)*, which first took place in 1972. This year, ICALP was co-located with the *45th ACM SIGACT-SIGOP Symposium on Principles of Distributed Computing (PODC 2026)* and the *38th ACM Symposium on Parallelism in Algorithms and Architectures (SPAA 2026)*.

The ICALP 2026 program consisted of two tracks:

Track A: Algorithms, Complexity, and Games

Track B: Automata, Logic, Semantics, and Theory of Programming

In response to the call for papers, a total of 628 eligible, anonymous submissions were received: 523 for Track A and 105 for Track B. The committees decided to accept 190 papers for inclusion in the scientific program: 155 papers for Track A and 35 for Track B. The selection was made by the program committees based on originality, quality, and relevance to theoretical computer science. The quality of the submissions was very high, and many deserving papers could not be selected.

The EATCS sponsored awards for both a best paper and a best student paper in each of the two tracks, selected by the program committees. The **best paper awards** were given to the following papers:

Track A: Mikhail Isaev, Tamás Makai, Brendan McKay, Paweł Prałat, Jane Tan, Maksim Zhukovskii. *Canonical Labelling of Random Regular Graphs*.

Track B: Benedikt Pago. *Optimal lower bounds for Symmetric Modular Circuits*.

The **best student paper awards**, for papers that are solely authored by students, were given to the following papers:

Track A: Fabian Egidy. *Recursive Jump Operators and Optimal Proof Systems*.

Track B: Daniel Alexander Spinner. *Deciding DFA-Primality is NP-Hard*.

ICALP 2026 included invited presentations by

- Nutan Limaye, IT University of Copenhagen, Denmark,
- Karl Bringmann, ETH Zurich, Switzerland,
- Georg Zetsche, MPI-SWS, Germany,
- Venkatesan Guruswami, UC Berkeley, USA.

This volume contains all contributed papers presented at the conference, together with abstracts or papers accompanying some of the invited talks.

The program of ICALP 2026 also included presentations of

- the **EATCS Award 2026** to Yishay Mansour (Tel Aviv University).
- the **Presburger Award 2026**, awarded jointly to Vincent Cohen-Addad (Google Research) and Gautam Kamath (University of Waterloo).
- the **Gödel Prize 2026** (joint with ACM SIGACT) jointly awarded to Ilias Diakonikolas (University of Wisconsin), Gautam Kamath (University of Waterloo and Vector Institute), Daniel Kane (University of California), Jerry Li (University of Washington), Ankur Moitra (Massachusetts Institute of Technology), and Alistair Stewart (University of Southern California) for the paper *Robust Estimators in High Dimensions without the Computational Intractability*, SIAM Journal on Computing, 48(2):742-864 (2019).

53rd International Colloquium on Automata, Languages, and Programming (ICALP 2026).

Editors: Sayan Bhattacharya, Danupon Nanongkai, Michael Benedikt, and Gabriele Puppis



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- the **Alonzo Church Award 2026**, awarded jointly to Pablo Barceló (Pontifical Catholic University of Chile and IMFD Chile), Leonid Libkin (University of Edinburgh), Wim Martens (University of Bayreuth), Juan Reutter (Pontifical Catholic University of Chile and IMFD Chile), Miguel Romero Orth (Pontifical Catholic University of Chile), Moshe Vardi (Rice University), and Domagoj Vrgoč (Pontifical Catholic University of Chile and IMFD Chile).
- the **EATCS distinguished dissertation award** to Noah Golowich, for the PhD thesis *Theoretical Foundations for Learning in Games and Dynamic Environments* (MIT), Ce Jin, for the PhD thesis *Exploiting Additive Structure in Algorithm Design and Fine-Grained Complexity* (MIT), and Hanlin Ren, for the PhD thesis *The Complexity of Explicit Construction Problems* (University of Oxford).

There was also the announcement of the **new EATCS Fellows** for 2026, who are:

- Joël Ouaknine (MPI-SWS),
- Prakash Panangaden (McGill University).

For this edition of ICALP, the program committees also recognized dedicated service by PC members and external reviewers:

Track A outstanding external reviewers: Arpon Basu, Jonas Ellert, Pierre-Etienne Meunier, Jakob Greilhuber, Meike Neuwöhner, Noah Singer, Helia Yazdanyar.

Track B outstanding PC member: Mahsa Shirmohammadi.

The following workshops were held as satellite events of ICALP 2026, during July 6, 2026:

- *Parameterized Approximation Algorithms Workshop (PAAW 2026)*,
- *24th International Workshop on Verification of Infinite-State Systems (INFINITY 2026)*,
- *Algorithmic Aspects of Temporal Graphs IX*,
- *Quantum Constraint Satisfaction Problems*.

We wish to thank all authors who submitted extended abstracts for consideration, the program committees for their scholarly effort, and all the reviewers who assisted the program committees in the evaluation process.

We are grateful to the Chair of the Local Organizing Committee, Matthew Hague, the Workshop Chair, Argyrios Deligkas, and their colleagues at Royal Holloway, and the EATCS, for their invaluable support in organizing ICALP 2026 in Egham.

Finally, we would like to thank Thore Husfeldt and Szymon Toruńczyk, Chair and Co-chair of the ICALP Steering Committee, and Giuseppe F. Italiano, president of EATCS, for their support, as well as the editorial office of LIPIcs for their support in editing these proceedings.

July 2026

Sayan Bhattacharya
Danupon Nanongkai
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