

# 15th Innovations in Theoretical Computer Science Conference

ITCS 2024, January 30 to February 2, 2024, Berkeley, CA, USA

Edited by

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## ■ Preface

The papers in this volume were presented at the 15th Innovations in Theoretical Computer Science (ITCS 2024) conference. The conference was held from January 30 to February 2, 2024 at the Simons Institute for the Theory of Computing on the campus of University of California, Berkeley.

ITCS seeks to promote research with innovative or bold agendas, which could be conceptual, technical, or methodological, and whose message will advance and inspire the greater theory community. Some examples of the kind of papers that the conference aims to feature are those introducing a new concept, model or understanding; opening a new line of inquiry within traditional or interdisciplinary areas; introducing new mathematical techniques and methodologies, or new applications of known techniques; putting forth a bold, even if preliminary, vision or line of attack; making interesting progress on traditional research directions; or unearthing novel or surprising connections between different topics.

The conference received 272 submissions of which the program committee accepted 103 papers (two of which were presented at the conference in a single merged time slot). The submission pool was strong, which explains the high acceptance rate. The conference format was single-session with the goal of promoting a sense of community, and promoting the exchange of ideas between different areas of theoretical computer science. Given this and the sizable number of accepted papers, each talk at the conference was only about 10 minutes long. The authors of each paper were thus requested to submit a 20-25 minute video, which are posted on the Simons Institute Youtube channel and linked from the conference website.

The program committee (PC) consisted of 42 fantastic members (excluding the chair): Maryam Aliakbarpour (Rice University), Benny Applebaum (Tel Aviv University), Arnab Bhattacharyya (National University of Singapore), Kshipra Bhawalkar (Google Research), Avrim Blum (Toyota Technological Institute at Chicago), Moses Charikar (Stanford University), Vincent Cohen-Addad (Google Research), Andrea Coladangelo (University of Washington), Jelena Diakonikolas (University of Wisconsin-Madison), Ran Duan (Tsinghua University), Alina Ene (Boston University), Bill Fefferman (University of Chicago), Shuichi Hirahara (National Institute of Informatics, Tokyo), Sivakanth Gopi (Microsoft Research), Fernando Granha Jeromino (Simons Institute, UC Berkeley), William Hoza (University of Chicago), Elias Koutsoupias (University of Oxford), Michael P. Kim (UC Berkeley/Cornell University), Bundit Laekhanukit (Shanghai University of Finance and Economics), Jerry Li (Microsoft Research), Ray Li (Santa Clara University), Giulio Malavolta (Bocconi University/Max Planck Institute for Security and Privacy), Daniele Micciancio (University of California, San Diego), Dor Minzer (Massachusetts Institute of Technology), Jonathan Mosheiff (Ben-Gurion University), Partha Mukhopadhyay (Chennai Mathematical Institute), Rasmus Pagh (University of Copenhagen), Aditya Potukuchi (York University), Eric Price (University of Texas at Austin), Dana Randall (Georgia Institute of Technology), Robert Robere (McGill University), Nicolas Resch (University of Amsterdam), Sushant Sachdeva (University of Toronto), Michael Saks (Rutgers University), Hadas Shachnai (Technion - Israel Institute of Technology), Rocco Servedio (Columbia University), Piyush Srivastava (Tata Institute of Fundamental Research, Mumbai), Xiaorui Sun (University of Illinois at Chicago), Magnus Wahlstrom (Royal Holloway, University of London), Matt Weinberg (Princeton University), Manolis Zampetakis (Yale University), and Goran Zuzic (Google Research).

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I am extremely grateful to all members of the PC, who worked really hard under very tight time constraints to produce a fantastic program as well as provide useful feedback to the authors, of accepted and rejected papers alike. The review process was double-blind, and throughout the review process the PC members did not have access to the identities of the authors on the hotcrp conference review software. The rationale behind the double-blind process was to help PC members and external reviewers come to a judgment about the paper without unconscious bias, but it was not intended to make it impossible for them to discover who the authors are. As such, the authors were free to post their papers or otherwise make them publicly available.

The program schedule was divided into sessions, each consisting of 6-7 papers. Following ITCS tradition, the chair of each session was tasked with “ranting” about the papers in the session, emphasizing their contributions and the ways in which they are innovative, and when possible tying all the papers in the session together. The program also continued with the wonderful ITCS tradition of “graduating bits,” where students and postdocs looking for academic jobs or postdoc opportunities give a very short (few minutes) presentation.

I would like to thank the Simons Institute for the Theory of Computing for offering its awesome space and auditorium for the conference, as well as hosting the event with its characteristic excellence and unique style. I am very grateful to the Simons Institute staff including William Humnicky who worked hard to plan and execute all the logistics flawlessly, and to Drew Mason for his help with handling and posting the video submissions from the authors. Many thanks to Joanne Talbot Hanley for help with the registration page and other logistics on behalf of the conference steering committee.

Let me end this preface with a personal thanks to Sandy Irani who was effectively the local arrangements chair at the Simons Institute and oversaw the event and budget planning with her characteristic thoroughness and good cheer, and to the ITCS Steering Committee chair Ronitt Rubinfeld for answering my numerous questions and wisely guiding me throughout the process. Working with both of you was a lot of fun, and I am glad that the conference was a big success!

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