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ITCS 2025, January 7–10, 2025, Columbia University, New York,
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Edited by

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■ Preface

The papers in this volume were presented at the 15th Innovations in Theoretical Computer Science (ITCS 2025) conference. The conference was held from January 7 to January 10, 2025 at Columbia University

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 303 submissions of which the program committee accepted 96 papers. 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 linked from the conference website. Among the many strong submissions, two papers *Random Restrictions of Bounded Low Degree Polynomials Are Juntas*, by Sreejata Kishor Bhattacharya (Tata Institute of Fundamental Research) and *Error Correction for Message Streams*, by Rachel Yun Zhang (MIT); Meghal Gupta (UC Berkeley) received the Best Student Paper Award.

The program committee (PC) consisted of 37 fantastic members (excluding the chair): Ittai Abraham (Intel), Sepehr Assadi (University of Waterloo), Andris Ambainis (University of Latvia), Prabhanjan Ananth (University of California, Santa Barbara), Srinivasan Arunachalam (IBM Research), Hadley Black (University of California, San Diego), Adam Bouland (Stanford University), Eshan Chattopadhyay (Cornell University), Lijie Chen (University of California, Berkeley), Rishabh Goyal (University of Wisconsin-Madison), Prahladh Harsha (Tata Institute of Fundamental Research), Aayush Jain (Carnegie Mellon University), Rahul Jain (National University of Singapore), Michael Kapralov (École polytechnique fédérale de Lausanne), Robert Kleinberg (Cornell University), Vasilis Kontonis (University of Texas at Austin), Pravesh Kothari (Princeton University), Ravi Kumar (Google Research), Jason Li (Carnegie Mellon University), Daniel Lokshtanov (University of California, Santa Barbara), Pasin Manurangasi (Google Research), Dor Minzer (Massachusetts Institute of Technology), Chinmay Nikhre (University of Washington, Seattle), Shayan Oveis Gharan (University of Washington, Seattle), Prasad Raghavendra (University of California, Berkeley), Guy Rothblum (Apple), Shubhangi Saraf (University of Toronto), Sushant Sachdeva (University of Toronto), Tselil Schramm (Stanford University), Sahil Singla (Georgia Institute of Technology), Srikanth Srinivasan (University of Copenhagen), Avishay Tal (University of California, Berkeley), Roei Tell (University of Toronto), Christos Tzamos (University of Athens), David Wajc (Technion), Ryan Williams (Massachusetts Institute of Technology), Jiapeng Zhang (University of Southern California).

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. In addition, while the conference did not have a formal rebuttal process, the PC engaged in interactive communication with the authors throughout the review process, coordinated by the chair, to address any misunderstandings (e.g., concerns about errors or missing attributions).


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. In addition, the local chairs also organized a fun game night during the conference.


I would like to thank Columbia University for hosting the event. Local chairs Josh Alman and Alexander Andoni were outstanding in their organization, smoothly managing the many unexpected issues that arose during the conference. I am also grateful to ITCS Steering Committee chair Guy Rothblum for his guidance, for patiently answering all my questions, and running the event smoothly. Josh, Alexander, and Guy were tremendously helpful in shouldering extra responsibilities during the physical conference, as I was unable to attend due to the emergency situation in Los Angeles at the time. Their efforts were essential to the conference’s success.


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