

# **11th Innovations in Theoretical Computer Science Conference**

**ITCS 2020, January 12–14, 2020, Seattle, Washington, USA**

Edited by

**Thomas Vidick**



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*ACM Classification 2012*

Mathematics of computing; Theory of computation

**ISBN 978-3-95977-134-4**

*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/978-3-95977-134-4>.

*Publication date*

January, 2020

*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.ITCS.2020.0

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## Preface

The papers in this volume were presented at the 11th Innovations in Theoretical Computer Science (ITCS 2020) conference. The conference was held at the University of Washington in Seattle, WA, USA, January 12-14, 2020. ITCS seeks to promote research that carries a strong conceptual message, for instance, introducing a new concept or model, opening a new line of inquiry within traditional or cross-interdisciplinary areas, introducing new techniques, or making novel connections between existing areas and ideas. The conference format is single-session and aims to promote the exchange of ideas between different areas of theoretical computer science and with other disciplines. The call for papers welcomed all submissions, whether aligned with current theory of computation research directions or deviating from them. A record 204 submissions were received. Of these, the program committee selected 86 papers. I would like to thank the authors of all submissions, whether accepted or not, for their interest in ITCS.

The program committee consisted of 32 members (plus the chair): Nikhil Bansal, CWI + TU Eindhoven; Nir Bitansky, Tel-Aviv University; Clement Canonne, Stanford; Timothy Chan, University of Illinois at Urbana-Champaign; Edith Cohen, Google and Tel-Aviv University; Shaddin Dughmi, University of Southern California; Sumegha Garg, Princeton; Ankit Garg, Microsoft research; Ran Gelles, Bar-Ilan University; Elena Grigorescu, Purdue; Tom Gur, University of Warwick; Sandy Irani, UC Irvine; Dakshita Khurana, University of Illinois at Urbana-Champaign; Antonina Kolokolova, Memorial University of Newfoundland.; Pravesh Kothari, Carnegie Mellon University; Rasmus Kyng, Harvard; Katrina Ligett, Hebrew University; Nutan Limaye, IIT Bombay; Pasin Manurangsi, UC Berkeley; Tamara Mchedlidze, Karlsruhe Institute of Technology; Dana Moshkovitz, UT Austin; Jelani Nelson, UC Berkeley; Merav Parter, Weizmann Institute; Krzysztof Pietrzak, IST Austria; Elaine Shi, Cornell; Piyush Srivastava, Tata Institute of Fundamental Research, Mumbai; Li-Yang Tan, Stanford; Madhur Tulsiani, TTIC; Gregory Valiant, Stanford; Virginia Vassilevska Williams, MIT; Ronald de Wolf, CWI and University of Amsterdam; David Woodruff, Carnegie Mellon University.

I wish to express my heartfelt thanks to them for agreeing to join the committee as well as for investing a great deal of time and effort to evaluate the submissions. I am also grateful to the many subreviewers who assisted with the reviewing process. The local organizer was Shayan Oveis Gharan from University of Washington. I would like to thank him very much for his service. I'm also grateful to Umesh Vazirani, chair of the ITCS Steering Committee, and the entire Steering Committee for their help and guidance in shaping the format of the conference. Finally, I would like to thank all the presenters and the audience at ITCS for making ITCS a wonderful experience.

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Ron Rosenthal	Irit Dinur	Aarushi Goel
Mariana Raykova	Qiang Tang	Rajesh Jayaram
Vedat Alev	Ron Rosenthal	Tali Kaufman
Noah Golowich	Cameron Musco	Bruce Kapron
Viet Tung Hoang	Rio LaVigne	Greg Bodwin
Ami Paz	Sidhanth Mohanty	Goutham Rajendran
Tami Tamir	Samson Zhou	Rahul Santhanam
Xiaorui Sun	Constantine Caramanis	David Eppstein
Andrea Lincoln	Carlos Santos	Srinivasan Arunachalam
Anupam Prakash	Suhail Sherif	Badih Ghazi
Vitaly Feldman	Akshayaram Srinivasan	Eshan Chattopadhyay
Ido Shahaf	Andy Drucker	Yilei Chen
Gilad Asharov	Huijia Lin	Jeremy Fineman
Govind Ramnarayan	Rishiraj Bhattacharyya	John Miller
Karl Bringmann	Arturs Backurs	Talya Eden
Oded Lachish	Themis Gouleakis	Sivakanth Gopi
Venkatesan Guruswami	Bo Waggoner	Zhiyi Huang
Ola Svensson	Marek Adamczyk	Ainesh Bakshi
Yuval Dagan	Riad Wahby	Justin Thaler
Yupeng Zhang	Rasmus Pagh	Ilya Razenshteyn
Brendan Lucier	Qiang Tang	Peter Gazi
Hila Dahari	Tianren Liu	Bruce Kapron
Stefano Tessaro	Sebastian Faust	Prabhanjan Ananth
Marco Carmosino	Igor Olivera	Yael Hitron
Brynmor Chapman	Debayan Gupta	Rotem Tsabary
Antigoni Polychroniadou	Jop Briët	Sivakanth Gopi
Michael Walter	Omer Paneth	