

# 40th IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science

FSTTCS 2020, December 14–18, 2020, BITS Pilani,  
K K Birla Goa Campus, Goa, India (Virtual Conference)

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## ■ Preface

This volume contains the proceedings of the 40th IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science (FSTTCS 2020). The conference was originally planned to be held in BITS Pilani, K K Birla Goa Campus, Goa, India. Due to the COVID-19 pandemic, the conference was held online from December 15 to December 17, 2020. The conference had two tracks, Track-A focussing on algorithms, complexity and related issues and Track-B focussing on logic, automata and other formal methods aspects of computer science. Each track had its own Program Committee (PC) with a chair. This volume constitutes the joint proceedings of the two tracks, published in the LIPIcs series under a Creative Commons license, with free online access to all.

The conference comprised of 6 invited talks, 27 contributed talks in Track-A and 25 in Track-B. This volume contains all the contributed papers from both tracks and the abstracts of all invited talks presented at the conference. There were overall 138 submissions, 75 in Track-A and 63 in Track-B. We thank all the authors who submitted their papers to FSTTCS 2020. We also express our gratitude to all the PC members for their tireless work and all external reviewers for their expert opinion in the form of timely reviews.

We are grateful to all the invited speakers: Sanjeev Arora (Princeton University, U.S.A.), Albert Atserias (Universitat Politècnica de Catalunya, Spain), Yin-Tat Lee (University of Washington, U.S.A.), Joël Ouaknine (MPI for Software Systems, Saarbrücken, Germany and University of Oxford, U.K.), Sanjit Seshia (University of California, Berkeley, U.S.A.) and Amir Shpilka (Tel Aviv University, Israel). They kindly accepted our invitations and gave talks that inspired the entire audience.

The main conference was preceded by two workshops: *Workshop on Matrix Rigidity*, organised by Amey Bhangale (University of California, Riverside), Alexander Golovnev (Georgetown University), Mrinal Kumar (IIT Bombay) and Amit Kumar Sinhababu (University of Ulm, Germany), and *Strategies for Uncertainty (SUN)* organised by Dietmar Berwanger (CNRS & ENS Paris-Saclay) and R. Ramanujam (IMSc, Chennai). This was followed by a post-conference workshop: *Advances in Verification* organised by Prakash Saivasan (IMSc, Chennai) and B. Srivathsan (CMI, Chennai). In addition, there was a co-located event: *Workshop on Research Highlights in Programming Languages* organised by Deepak D'Souza (IISc, Bangalore), Uday P. Khedkar (IIT Bombay), K. Narayan Kumar (CMI, Chennai), Komondoor V. Raghavan (IISc, Bangalore) and Aseem Rastogi (Microsoft Research, India).

We are indebted to the organising committee members: A. Baskar (BITS Pilani), Pritam Bhattacharya (BITS Pilani), Amaldev Manuel (IIT Goa), Anup Basil Mathew (BITS Pilani) and A.V. Sreejith (IIT Goa). They ensured a smooth running of the conference and workshops; and made all necessary arrangements to shift to the online mode. We thank S.P. Suresh (CMI, Chennai) for maintaining the conference webpage and promptly addressing our update requests. We also thank the friendly staff at Dagstuhl LIPIcs, particularly Michael Wagner, for being prompt and helpful in answering our queries. Finally, we thank the members of the Steering Committee for having confidence in us for running the conference; and giving us pertinent advice to handle the unprecedented changes made in the conduct of the conference.

Nitin Saxena and Sunil Simon  
December 2020





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