Foreword

The papers in these proceedings were presented at the 50th Annual Symposium on Foundations of Computer Science (FOCS 2010) sponsored by the IEEE Technical Committee on Mathematical Foundations of Computing. The conference was held in Las Vegas, Nevada, 23-26 October 2010.

The program committee consisted of Scott Aaronson (Massachusetts Institute of Technology), Dorit Aharonov (Hebrew University), Eli Ben-Sasson (Technion), Julia Chuzhoy (Toyota Technological Institute at Chicago), Ryan O'Donnell (Carnegie Mellon University), Roberto Grossi (University of Pisa), Nick Harvey (University of Waterloo), Adam Kalai (Microsoft Research), Nicole Immorlica (Northwestern University), Yuval Ishai (Technion and University of California, Los Angeles), Lap Chi Lau (The Chinese University of Hong Kong), James Lee (University of Washington), Tal Malkin (Columbia University), Joe Mitchell (Stony Brook University), Dana Moshkovitz (Institute for Advanced Study), S. Muthukrishnan (Rutgers University), Christos Papadimitriou (University of California, Berkeley), Sofya Raskhodnikova (Penn State University), Steve Skiena (Stony Brook University), Mikkel Thorup (ATT Research), Luca Trevisan (Stanford University and University of California, Berkeley), and Eric Vigoda (Georgia Institute of Technology).

The committee met in New York City, thanks to the kind hosting of Tal Malkin, on June 20 and 21, 2010, and selected 81 papers of the 270 submissions. In addition to the regular program, the committee invited Ketan Mulmuley, Mihai Patrascu and Tim Roughgarden to deliver tutorial lectures, and Toni Pitassi and Dan Spielman to deliver invited talks.

The committee selected "Bounds on Monotone Switching Networks for Directed Connectivity" by Aaron Potechin to select the Machtey award for the best student-authored papers.

The committee selected the papers "Approximation Algorithms for the Edge-Disjoint Paths Problem via Raecke Decompositions" by Matthew Andrews; "Subexponential Algorithms for Unique Games and Related problems" by Sanjeev Arora, Boaz Barak and David Steurer; and "Computational Transition at the Uniqueness Threshold" by Allan Sly to share the best paper award.

I would like to thank all the authors who submitted papers, the 158 external reviewers who helped with the reviewing process by submitting a total of 451 reviews, Shai Halevi for developing the software we used for the submission and evaluation process, and Paul Beame for his very valuable advice and for answering countless questions. Special thanks are also due to Talk Malkin and Ryan O'Donnell for their work as vice-chairs and for taking over during a difficult time.

Luca Trevisan
Program Committee Chair