Approximation, Randomization, and Combinatorial Optimization. Algorithms and Techniques

21st International Workshop, APPROX 2018, and
22nd International Workshop, RANDOM 2018
August 20–22, 2018, Princeton, USA

Edited by

Eric Blais
Klaus Jansen
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Contributed Talks of RANDOM

Preface

This volume contains the papers presented at the 21st International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX 2018) and the 22nd International Workshop on Randomization and Computation (RANDOM 2018), which took place concurrently at the at University of Princeton in Princeton, USA during August 20–22, 2018.

APPROX focuses on algorithmic and complexity issues surrounding the development of efficient approximate solutions to computationally difficult problems, and was the 21st in the series after Aalborg (1998), Berkeley (1999), Saarbrücken (2000), Berkeley (2001), Rome (2002), Princeton (2003), Cambridge (2004), Berkeley (2005), Barcelona (2006), Princeton (2007), Boston (2008), Berkeley (2009), Barcelona (2010), Princeton (2011), Boston (2012), Berkeley (2013), Barcelona (2014), Princeton (2015), Paris (2016), and Berkeley (2017). RANDOM is concerned with applications of randomness to computational and combinatorial problems, and was the 22nd workshop in the series following Bologna (1997), Barcelona (1998), Berkeley (1999), Geneva (2000), Berkeley (2001), Harvard (2002), Princeton (2003), Cambridge (2004), Berkeley (2005), Barcelona (2006), Princeton (2007), Boston (2008), Berkeley (2009), Barcelona (2010), Princeton (2011), Boston (2012), Berkeley (2013), Barcelona (2014), Princeton (2015), Paris (2016), and Berkeley (2017).

Topics of interest for APPROX and RANDOM are: approximation algorithms, hardness of approximation, small space, sub-linear time and streaming algorithms, online algorithms, approaches that go beyond worst case analysis, distributed and parallel approximation, embeddings and metric space methods, mathematical programming methods, spectral methods, combinatorial optimization in graphs and networks, algorithmic game theory, mechanism design and economics, computational geometric problems, approximate learning, design and analysis of randomized algorithms, randomized complexity theory, pseudorandomness and derandomization, random combinatorial structures, random walks/Markov chains, expander graphs and randomness extractors, probabilistic proof systems, random projections and embeddings, error-correcting codes, average-case analysis, smoothed analysis, property testing, computational learning theory, and other applications of approximation and randomness.

The volume contains 28 contributed papers, selected by the APPROX Program Committee out of 50 submissions, and 30 contributed papers, selected by the RANDOM Program Committee out of 73 submissions.

We would like to thank all of the authors who submitted papers, the invited speakers, the members of the Program Committees, and the external reviewers. We gratefully acknowledge the Cheriton School of Computer Science of the University of Waterloo in Canada, the Department of Computer Science of the Christian-Albrechts-Universität zu Kiel, the Department of Computer Science of the University of Geneva, and the School of Operations Research and Information Engineering of the Cornell University.

August 2018

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