

# Approximation, Randomization, and Combinatorial Optimization. Algorithms and Techniques

18th International Workshop, APPROX 2015, and  
19th International Workshop, RANDOM 2015  
August 24–26, 2015, Princeton, USA

Edited by

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## ■ Preface

This volume contains the papers presented at the 18th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX 2015) and the 19th International Workshop on Randomization and Computation (RANDOM 2015), which took place concurrently in Princeton University, USA during August 24–26, 2015.

APPROX focuses on algorithmic and complexity issues surrounding the development of efficient approximate solutions to computationally difficult problems, and was the 17th 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), and Princeton (2011), Boston (2012), Berkeley (2013), Barcelona (2014). RANDOM is concerned with applications of randomness to computational and combinatorial problems, and was the 18th 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).

Topics of interest for APPROX and RANDOM are: design and analysis of approximation algorithms, hardness of approximation, small space algorithms, sub-linear time algorithms, streaming algorithms, embeddings and metric geometry, mathematical programming methods, combinatorial problems in graphs and networks, algorithmic game theory and economic, computational geometric problems, approximate learning, online algorithms, approaches that go beyond worst case analysis, 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, property testing, computational learning theory, and other applications of approximation and randomness.

The volume contains 26 contributed papers, selected by the APPROX Program Committee out of 61 submissions, and 30 contributed papers, selected by the RANDOM Program Committee out of 79 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 Department of Computer Science and Engineering of the Indian Institute of Technology Delhi, the Institute of Computer Science of the Christian-Albrechts-Universität zu Kiel, the Department of Computer Science and Engineering of the University of Washington, and the Department of Computer Science of the University of Geneva.

August 2015

Naveen Garg  
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