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Approximation, Randomization, and Combinatorial Optimization

Algorithms and Techniques

14th International Workshop, APPROX 2011
and 15th International Workshop, RANDOM 2011
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Proceedings

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Preface

This volume contains the papers presented at the 14th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX 2011) and the 15th International Workshop on Randomization and Computation (RANDOM 2011), which took place concurrently in Princeton University, USA, during August 17–19, 2011.

APPROX focuses on algorithmic and complexity issues surrounding the development of efficient approximate solutions to computationally difficult problems, and was the 14th 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), and Barcelona (2010). RANDOM is concerned with applications of randomness to computational and combinatorial problems, and was the 15th 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), and Barcelona (2010).

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 space methods, mathematical programming methods, combinatorial problems in graphs and networks, game theory, markets and economic applications, geometric problems, packing, covering, scheduling, approximate learning, design and analysis of online algorithms, 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 29 contributed papers, selected by the APPROX Program Committee out of 66 submissions, and 29 contributed papers, selected by the RANDOM Program Committee out of 64 submissions.

We would like to thank all of the authors who submitted papers, the two invited speakers, David P. Williamson and Joel Spencer, the members of the Program Committees, and the external reviewers.

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at Carnegie Mellon, USA, the Institute of Computer Science of the Christian-Albrechts-Universität zu Kiel, and the Department of Computer Science of the University of Geneva.

Finally, many thanks to Parvaneh Karimi-Massouleh for editing the proceedings.

August 2011

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