

Approximation, Randomization, and Combinatorial Optimization. Algorithms and Techniques

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■ Preface

This volume contains the papers presented at the 24th International Conference on Approximation Algorithms for Combinatorial Optimization Problems (APPROX 2021) and the 25th International Conference on Randomization and Computation (RANDOM 2021), which due to COVID-19 were organized as parallel virtual conferences during August 16–18, 2021. APPROX focuses on algorithmic and complexity issues surrounding the development of efficient approximate solutions to computationally difficult problems, and was the 24th in the series. RANDOM is concerned with applications of randomness to computational and combinatorial problems, and was the 25th in the series. Prior to 2003, APPROX took place in Aalborg (1998), Berkeley (1999), Saarbrücken (2000), Berkeley (2001), and Rome (2002), while RANDOM took place in Bologna (1997), Barcelona (1998), Berkeley (1999), Geneva (2000), Berkeley (2001), and Harvard (2002). Since 2003, APPROX and RANDOM have been co-located, taking place in 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), Berkeley (2017), Princeton (2018), Boston (2019), and online (2020).

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, 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, and computational learning theory.

The volume contains 27 contributed papers, selected by the APPROX Program Committee out of 62 submissions; and 35 contributed papers, selected by the RANDOM Program Committee out of 84 submissions. We would like to thank all of the authors who submitted papers, the members of the Program Committees, and the external reviewers. We are grateful for the guidance of the steering committees: Jarosław Byrka, Klaus Jansen, Samir Khuller, Monaldo Mastrolili, and László Végh for APPROX, and Oded Goldreich, Raghu Meka, Cris Moore, Anup Rao, Omer Reingold, Dana Ron, Ronitt Rubinfeld, Amit Sahai, Ronen Shaltiel, Alistair Sinclair, and Paul Spirakis for RANDOM.



