

## Preface

This volume contains the papers presented at the 6th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX 2003) and the 7th International Workshop on Randomization and Approximation Techniques in Computer Science (RANDOM 2003), which took place concurrently at Princeton University during August 24–26, 2003. APPROX focuses on algorithmic and complexity issues surrounding the development of efficient approximate solutions to computationally hard problems, and this was the sixth in the series, after Aalborg (1998), Berkeley (1999), Saarbrücken (2000), Berkeley (2001), and Rome (2002). RANDOM is concerned with applications of randomness to computational and combinatorial problems, and this was the seventh workshop in the series, following Bologna (1997), Barcelona (1998), Berkeley (1999), Geneva (2000), Berkeley (2001), and Harvard (2002).

Topics of interest for APPROX and RANDOM are: design and analysis of randomized algorithms, randomized complexity theory, design and analysis of approximation and online algorithms, complexity of approximation problems, random combinatorial structures, error-correcting codes, pseudorandomness and derandomization, network models and algorithms, average-case analysis, property testing, expander graphs and randomness extractors, random walks, Markov chains, probabilistic proof systems, random projections and embeddings, computational learning, randomness in cryptography, and various applications.

The volume contains 16+17 (APPROX + RANDOM) contributed papers, selected by the two program committees from 40+34 submissions received in response to the call for papers.

We would like to thank all of the authors who submitted papers, the members of the program committees

### **APPROX 2003**

Sanjeev Arora, Princeton, Chair  
Yossi Azar, Tel Aviv  
Gruia Calinescu, Illinois IT  
Chandra Chekuri, Bell Labs  
Anupam Gupta, CMU  
George Karakostas, McMaster  
Philip Klein, Brown  
Robert Krauthgamer, Berkeley  
Kamal Jain, Microsoft  
Stefano Leonardi, Rome  
Yuri Rabinovich, Haifa  
David Williamson, IBM

### **RANDOM 2003**

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Paul Beame, Seattle  
Bernard Chazelle, Princeton  
Jennifer Chayes, Microsoft  
Alan Frieze, CMU  
Joe Kilian, NEC  
Eyal Kushilevitz, Technion  
Dana Randall, Georgia Tech  
Ran Raz, Weizmann and Princeton  
Dana Ron, Tel Aviv  
Michael Saks, Rutgers  
Alistair Sinclair, Berkeley  
Chris Umans, Cal Tech

and the external subreferees: Dimitris Achlioptas, Andris Ambainis, Matthew Andrews, Aaron Archer, Nikhil Bansal, Luca Becchetti, Christian Borgs, Moses Charikar, Shuchi Chawla, Bernard Chazelle, Joseph Cheriyan, Don Coppersmith, Artur Czumaj, Bhaskar Dasgupta, Nikhil Devanur, Adrian Dumitrescu, Martin Dyer, Leah Epstein, Eldar Fischer, Rosario Gennaro, Catherine Greenhill, Sudipto Guha, Shirley Halevy, Shlomo Hoory, Sandy Irani, Yuval Ishai, Mark Jerrum, Ryan Johnston, Ravi Kannan, Anna Karlin, Howard Karloff, Michal Karonski, Claire Kenyon, Sanjeev Khanna, Subhash Khot, Alexei Kitaev, Michael Krivelevich, Amit Kumar, Vijay Kumar, Xiang-Yang Li, Vincenzo Liberatore, Laci Lovasz, Avner Magen, Mohammad Mahdian, Adam Meyerson, Micheal Mitzenmacher, Kousha Moaveni-Nejad, Michael Molloy, Cris Moore, Elchanan Mossel, Moni Naor, Ashwin Nayak, Gaia Nicosia, Andrew Odlyzko, Alessandro Panconesi, Christos Papadimitriou, Rene Peralta, Yuval Rabani, R. Ravi, Oded Regev, Yossi Richter, Adi Rosen, Alex Russell, Amin Saberi, Mohammad R. Salavatipour, Guido Schaefer, Rene Sitters, Angelika Steger, Kunal Talwar, Prasad Tetali, Luca Trevisan, Kasturi Varadarajan, Umesh Vazirani, Santosh Vempala, Jacques Verstraete, Anastasios Viglas, Eric Vigoda, Berthold Voecking, Peng-Jun Wan, Peter Winkler, and David Zuckerman.

We gratefully acknowledge support from the Computer Science Department of Princeton University, the Institute of Computer Science of the Christian-Albrechts-Universität zu Kiel, and the Department of Computer Science of the University of Geneva. We also thank Ute Iaquinto, Marian Margraf and Parvaneh Karimi Massouleh for their help, and Mitra Kelly for the local arrangements.

August 2003

Sanjeev Arora and Amit Sahai, Program Chairs  
Klaus Jansen and José D.P. Rolim, Workshop Chairs