

Preface

This volume contains the 74 contributed papers and abstracts of 4 of the 5 invited talks presented at the 10th Annual European Symposium on Algorithms (ESA 2002), held at the University of Rome “La Sapienza”, Rome, Italy, 17-21 September, 2002.

For the first time, ESA had two tracks, with separate program committees, which dealt respectively with:

- the design and mathematical analysis of algorithms (the “Design and Analysis” track);
- real-world applications, engineering and experimental analysis of algorithms (the “Engineering and Applications” track).

Previous ESAs were held in Bad Honnef, Germany (1993); Utrecht, The Netherlands (1994); Corfu, Greece (1995); Barcelona, Spain (1996); Graz, Austria (1997); Venice, Italy (1998); Prague, Czech Republic (1999); Saarbrücken, Germany (2000), and Århus, Denmark (2001). The predecessor to the Engineering and Applications track of ESA was the Annual Workshop on Algorithm Engineering (WAE). Previous WAEs were held in Venice, Italy (1997), Saarbrücken, Germany (1998), London, UK (1999), Saarbrücken, Germany (2000), and Århus, Denmark (2001).

The proceedings of the previous ESAs were published as Springer LNCS volumes 726, 855, 979, 1284, 1461, 1643, 1879, and 2161. The proceedings of WAEs from 1999 onwards were published as Springer LNCS volumes 1668, 1982, and 2161.

Papers were solicited in all areas of algorithmic research, including but not limited to: Computational Biology, Computational Finance, Computational Geometry, Databases and Information Retrieval, External-Memory Algorithms, Graph and Network Algorithms, Graph Drawing, Machine Learning, Network Design, On-line Algorithms, Parallel and Distributed Computing, Pattern Matching and Data Compression, Quantum Computing, Randomized Algorithms, and Symbolic Computation. The algorithms could be sequential, distributed, or parallel. Submissions were strongly encouraged in the areas of mathematical programming and operations research, including: Approximation Algorithms, Branch-and-Cut Algorithms, Combinatorial Optimization, Integer Programming, Network Optimization, Polyhedral Combinatorics, and Semidefinite Programming.

Each extended abstract was submitted to exactly one of the two tracks, and some abstracts were switched from one track to the other at the discretion of the program chairs, before the reviewing process. The extended abstracts were read by at least three referees each, and evaluated on their quality, originality, and relevance to the symposium. The program committees of both tracks met at TU Berlin on May 24 and 25. Of 149 abstracts submitted for the Design and

Analysis track, 50 were selected for presentation. Of 52 abstracts submitted for the Engineering and Applications track, 24 were selected for presentation.

The members of the program committees of the two tracks were:

<i>Design and Analysis Track</i>		<i>Engineering and Applications Track</i>	
Susanne Albers	(Freiburg)	Karen Aardal	(Utrecht)
Stephen Alstrup	(ITU, København)	Camil Demetrescu	(Roma)
János Csirik	(Szeged)	Olivier Devillers	(INRIA)
Thomas Erlebach	(ETH, Zürich)	Thomas Liebling	(EPF, Lausanne)
Sándor Fekete	(Braunschweig)	Michael Mitzenmacher	(Harvard)
Lisa Fleischer	(Carnegie-Mellon)	David Mount	(Maryland)
Kazuo Iwama	(Kyoto)	Matthias Müller-Hannemann	(Bonn)
Alberto Marchetti-Spaccamela	(Roma)	S. Muthukrishnan	(Rutgers)
Rolf Möhring	(TU Berlin, chair)	Petra Mutzel	(TU Wien)
Günter Rote	(FU Berlin)	Rajeev Raman	(Leicester, chair)
Andreas Schulz	(MIT)	Peter Sanders	(MPI Informatik)
Jiří Sgall	(CAS, Praha)		
Christos Zaroliagis	(Patras)		
Uri Zwick	(Tel Aviv)		

ESA 2002 was held along with the 5th International Workshop on Approximation Algorithms for Combinatorial Optimization (APPROX 2002), the 2nd Workshop on Algorithms in Bioinformatics (WABI 2002), and the 3rd Workshop on Approximation and Randomization Algorithms in Communication NETWORKS (ARACNE 2002) in the context of the combined conference ALGO 2002.

The organizing committee of ALGO 2002 consisted of: Giorgio Ausiello, Fabrizio d'Amore, Camil Demetrescu, Silvana Di Vincenzo, Paolo Giulio Franciosa, Daniele Frigioni, Stefano Leonardi, Alberto Marchetti-Spaccamela, and Alessandro Panconesi.

ESA 2002 was sponsored by EATCS (the European Association for Theoretical Computer Science). The EATCS sponsorship included an award of EUR 500 for the best student paper at ESA 2002. This award was shared by Mayur Datar for his paper *Multibutterflies and Peer-to-Peer Networks* and by Marcin Pecarski for his paper *Sorting 16 Elements Requires 34 Comparisons*.

July 2002

Rolf Möhring and Rajeev Raman
Program Chairs, ESA 2002

Referees

Dimitris Achlioptas
Oswin Aichholzer
Tatsuya Akutsu
Jochen Alber
Itai Alon
Helmut Alt
Ernst Althaus
Christoph Ambuehl
Sai Anand
Lars Arge
Estie Arkin
Franz Aurenhammer
Giorgio Ausiello
Adi Avidor
Ricardo Baeza-Yates
Georg Baier
Brenda Baker
Nikhil Bansal
Gill Barequet
Luca Becchetti
Rene Beier
Alexander Below
Amir Ben-Amram
Michael Bender
Therese Biedl
Philip Bille
Avrim Blum
Jens-Peter Bode
Hans Bodlaender
Joan Boyar
Peter Braß
Gerth Brodal
Britta Broser
Dan Brown
Adam Buchsbaum
Ioannis Caragiannis
Frederic Cazals
Marco Cesati
Chandra Chekuri
Marek Chrobak
William Cook
Derek Corneil
Artur Czumaj
Fabrizio d'Amore

Mark de Berg
Brian Dean
Romuald Debruyne
Erik Demaine
Camil Demetrescu
Luc Devroye
Giuseppe Di Battista
Vida Dujmovic
Sebastian Egner
Stephan Eidenbenz
Andreas Eisenblätter
Ioannis Emiris
David Eppstein
Leah Epstein
Patricia Evans
Guy Even
Rolf Fagerberg
Amr Farahat
Lene Monrad Favrholdt
Stefan Felsner
Paolo Ferragina
Jiri Fiala
Amos Fiat
Dimitris Fotakis
Alan Frieze
Stefan Funke
Hal Gabow
Naveen Garg
Cyril Gavoille
Joachim Giesen
Inge Li Gørtz
Catherine Greenhill
Roberto Grossi
Dimitrios Gunopulos
Anupam Gupta
Jens Gustedt
Torben Hagerup
Peter Hajnal
Alexander Hall
Toru Hasunuma
Laura Heinrich-Litan
John Hersberger
Winfried Hochstaettler
Frank Hoffmann

Thomas Hofmeister
Takashi Horiyama
Keiko Imai
Michiko Inoue
Toshimasa Ishii
Giuseppe F. Italiano
Hiro Ito
Chuzo Iwamoto
Riko Jacob
Klaus Jansen
Berit Johannes
Tibor Jordan
Vanessa Käab
Lars Kaderali
Volker Kaibel
Haim Kaplan
Sanjiv Kapoor
Menelaos Karavelas
Juha Kärkkäinen
Jyrki Katajainen
Michael Kaufmann
Makino Kazuhisa
Claire Kenyon
Richard Kenyon
Lutz Kettner
Sanjeev Khanna
Ralf Klasing
Gunnar Klau
Sandi Klavžar
Rolf Klein
Jon Kleinberg
Bettina Klinz
Christian Knauer
Gabriele Kodydek
Ekkehard Köhler
Stavros Kolliopoulos
Petr Kolman
Jochen Könemann
Ulrich Kortenkamp
Guy Kortsarz
Arie Koster
Daniel Kral
Georg Kraml
Klaus Kriegel

VIII Referees

Sven Krumke	Jesper Holm Olsen	Jack Snoeyink
Sebastian Leipert	Joe O'Rourke	Roberto Solis-Oba
Stefano Leonardi	Anna Östlin	Ewald Speckenmeyer
Adam Letchford	Rasmus Pagh	Bettina Speckmann
Andrzej Lingas	Christian N. S. Pedersen	Jeremy Spinrad
Ivana Ljubić	Itsik Pe'er	Paul Spirakis
Marco Lübbecke	Marco Pellegrini	S. Srinivasa Rao
Frank Lutz	Shietung Peng	Yiannis Stamatiou
Christos Makris	Seth Pettie	Stamatis Stefanakos
Alberto Marchetti-	Marc Pfetsch	Cliff Stein
Spaccamela	Athanasios Poulakidas	Leen Stougie
Chip Martel	Kirk Pruhs	Subhash Suri
Conrado Martinez	Tomasz Radzik	Mario Szegedy
Toshimitsu Masuzawa	Naila Rahman	Takashi Takabatake
Madhav Marathe	Jörg Rambau	Ayellet Tal
Yossi Matias	Edgar Ramos	Roberto Tamassia
Ross McConnell	Theis Rauhe	Arie Tamir
Colin McDiarmid	R. Ravi	Vanessa Teague
Terry McKee	Eric Remila	Sven Thiel
Henk Meijer	Franz Rendl	Mikkel Thorup
Adam Meyerson	Ares Ribó	Takeshi Tokuyama
Joseph Mitchell	Liam Roditty	Kostas Tsichlas
Hiro Yoshi Miwa	Amir Ronen	Tatsuie Tsukiji
Shuichi Miyazaki	Peter Rossmanith	Marc Uetz
Géraldine Morin	Ingo Schiermeyer	Takeaki Uno
Walter Morris	Stefan Schirra	Hein van der Holst
Christian W. Mortensen	Elmar Schömer	Rob van Stee
Nicolas Stier Moses	Martin Schönhacker	Rakesh Vohra
Rudolf Müller	Steve Seiden	Danica Vukadinovic
David Mount	Maria Jose Serna	Uli Wagner
S. Muthukrishnan	Jay Sethuraman	Dorothea Wagner
Stefan Näher	Micha Sharir	Arnold Wassmer
Hiroshi Nagamochi	Bruce Shepherd	René Weiskircher
Shin-ichi Nakano	Tetsuo Shibuya	Carola Wenk
Giri Narasimhan	Akiyoshi Shioura	Peter Widmayer
Gonzalo Navarro	Amitabh Sinha	Gerhard Woeginger
Nathan Netanyahu	Spyros Sioutas	Alexander Wolff
Rolf Niedermeier	Rene Sitters	Günter Ziegler
Mads Nielsen	Steve Skiena	Martin Zinkevich
Sotiris Nikolettseas	Martin Skutella	
Koji Obokata	Michiel Smid	

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