Preface

This volume contains the 66 contributed papers and abstracts of the three invited lectures presented at the 11th Annual European Symposium on Algorithms (ESA 2003), held in Budapest, September 16–19, 2003. The papers in each section of the proceedings are arranged alphabetically. The three distinguished invited speakers were Bernard Chazelle, Roberto Tamassia, and Éva Tardos.

For the second 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 at 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); Århus, Denmark (2001), and Rome, Italy (2002). 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), Århus, Denmark (2001), and Rome, Italy (2002) .

The proceedings of the previous ESAs were published as Springer-Verlag's LNCS volumes 726, 855, 979, 1284, 1461, 1643, 1879, 2161, and 2461. The proceedings of the WAEs from 1999 onwards were published as Springer-Verlag's LNCS volumes 1668, 1982, and 2141.

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, online 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 one of the two tracks. 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 the Università delgi Studi "Roma Tre", on May 23rd and 24th. The Design and Analysis track selected for presentation 46 out of the 119 submitted abstracts. The Engineering and Applications track selected for presentation 20

authors of the best student paper at ESA 2003. The winners of this prize were Mohammad Mahdian and Martin Pál for their paper *Universal Facility Location.*

Uri Zwick would like to thank Yedidyah Bar-David and Anat Lotan for their assistance in handling the submitted papers and assembling these proceedings.

We hope that this volume offers the reader a representative selection of some of the best current research on algorithms.

July 2003   Giuseppe Di Battista and Uri Zwick

Reviewers

We would like to thank the reviewers for their timely and invaluable contribution.

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out of the 46 submitted abstracts. The program committees of the two tracks consisted of:

<div align="center">Design and Analysis Track</div>

Yair Bartal	(Hebrew University, Jerusalem)
Jean-Daniel Boissonnat	(INRIA Sophia Antipolis)
Moses Charikar	(Princeton University)
Edith Cohen	(AT&T Labs – Research, Florham Park)
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Bernd Gärtner	(ETH, Zürich)
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Kurt Mehlhorn	(MPI, Saarbrücken)
Theis Rauhe	(ITU, København)
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Gábor Tardos	(Rényi Institute, Budapest)
Jens Vygen	(University of Bonn)
Uri Zwick (Chair)	(Tel Aviv University)

<div align="center">Engineering and Applications Track</div>

Giuseppe Di Battista (Chair)	(Roma Tre)
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ESA 2003 was held along with the third Workshop on Algorithms in Bioinformatics (WABI 2003), a workshop on Algorithmic MeThods and Models for Optimization of RailwayS (ATMOS 2003), and the first Workshop on Approximation and Online Algorithms (WAOA 2003) in the context of the combined conference ALGO 2003. The organizing committee of ALGO 2003 consisted of:

<div align="center">

János Csirik (Chair)

Csanád Imreh

</div>

both from the University of Szeged.

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