Lecture Notes in Computer Science 7164

Commenced Publication in 1973
Founding and Former Series Editors:
Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

Roberto Solis-Oba Giuseppe Persiano (Eds.)

Approximation and Online Algorithms

9th International Workshop, WAOA 2011
Saarbrücken, Germany, September 8-9, 2011
Revised Selected Papers

Springer

Volume Editors

Roberto Solis-Oba
The University of Western Ontario
Department of Computer Science
London, ON, N6A 5B7, Canada
E-mail: solis@csd.uwo.ca

Giuseppe Persiano
Università di Salerno
Dipartimento di Informatica "Renato M. Capocelli"
Via Ponte Don Melillo, 84081 Fisciano (SA), Italy
E-mail: giuper@dia.unisa.it

ISSN 0302-9743 e-ISSN 1611-3349
ISBN 978-3-642-29115-9 e-ISBN 978-3-642-29116-6
DOI 10.1007/978-3-642-29116-6
Springer Heidelberg Dordrecht London New York

Library of Congress Control Number: 2012934372

CR Subject Classification (1998): F.2.2, G.2.1-2, G.1.2, G.1.6, I.3.5, E.1

LNCS Sublibrary: SL 1 – Theoretical Computer Science and General Issues

Typesetting: Camera-ready by author, data conversion by Scientific Publishing Services, Chennai, India

Printed on acid-free paper

Springer is part of Springer Science+Business Media (www.springer.com)

Preface

The 9th Workshop on Approximation and Online Algorithms (WAOA 2011) took place in Saarbrücken, Germany, September 8–9, 2011. The workshop was part of the ALGO 2011 event that also hosted ESA 2011, WABI 2011, IPEC 2011, ALGOSENSORS 2011, and ATMOS 2011. The previous WAOA workshops were held in Budapest (2003), Rome (2004), Palma de Mallorca (2005), Zurich (2006), Eilat (2007), Karlsruhe (2008), Copenhagen (2009), and Liverpool (2010). The proceedings of these previous WAOA workshops have appeared as LNCS volumes 2909, 3351, 3879, 4368, 4927, 5426, 5893, and 6534, respectively.

The Workshop on Approximation and Online Algorithms focuses on the design and analysis of algorithms for online and computationally hard problems. Both kinds of problems have a large number of applications in a wide variety of fields. Topics of interest for WAOA 2011 were: algorithmic game theory, approximation classes, coloring and partitioning, competitive analysis, computational finance, cuts and connectivity, geometric problems, inapproximability results, mechanism design, network design, packing and covering, paradigms for design and analysis of approximation and online algorithms, parameterized complexity, randomization techniques and scheduling problems.

In response to the call for papers, we received 48 submissions. Each submission was reviewed by at least three referees. The submissions were mainly judged on originality, technical quality, and relevance to the topics of the conference. Based on the reviews, the Program Committee selected 21 papers. In addition to the presentations of the 21 accepted papers, Klaus Jansen from the University of Kiel gave an invited talk on "Approximation Algorithms for Scheduling and Packing Problems."

We are grateful to Andrei Voronkov for providing the EasyChair conference system, which was used to manage the electronic submissions and the review process. It made our task much easier. We would also like to thank all the authors who submitted papers to WAOA 2011 as well as the local organizers of ALGO 2011.

November 2011

Roberto Solis-Oba
Giuseppe Persiano

Organization

Program Co-chairs

Roberto Solis-Oba	University of Western Ontario, Canada
Giuseppe Persiano	Università di Salerno, Italy

Program Committee

Vincenzo Auletta	Università di Salerno, Italy
Evripidis Bampis	University of Evry, France
Ioannis Caragiannis	University of Patras, Greece
Jose Correa	Universidad de Chile, Chile
Khaled Elbassioni	Max Planck Institut für Informatik, Germany
Rudolf Fleischer	Fudan University, China
Thomas Erlebach	University of Leicester, UK
Klaus Jansen	University of Kiel, Germany
Christos Kaklamanis	University of Patras, Greece
Jochen Könemann	University of Waterloo, Canada
Alejandro López-Ortiz	University of Waterloo, Canada
Monaldo Mastrolilli	IDSIA Lugano, Switzerland
Julian Mestre	University of Sydney, Australia
Giuseppe Persiano	(Co-chair), Università di Salerno, Italy
Hadas Shachnai	Technion, Israel
Roberto Solis-Oba	(Co-chair), University of Western Ontario, Canada
Clifford Stein	Columbia University, USA
Denis Trystram	Grenoble Institute of Technology, France
Carmine Ventre	University of Liverpool, UK

Additional Referees

Markus Bläser
Marin Bougeret
Stefan Canzar
Johanne Cohen
Reza Dorrigiv
Ioannis Emiris
Leah Epstein
Cristina Fernandes
Diodato Ferraioli
Robert Fraser
Konstantinos Georgiou
Masud Hasan
Chien-Chung Huang
Sungjin Im
Shahin Kamali
Panagiotis Kanellopoulos
Nikos Karanikolas
Kim Klein
Ephraim Korach
Stefan Kraft
Ariel Kulik
Maria Kyropoulou

Bundit Laekhanukit
Dimitris Letsios
Giorgio Lucarelli
Hamid Mahini
Bodo Manthey
Nicole Megow
Nikolaus Mutsanas
Rajiv Raman
Aris Pagourtzis
Konstantinos Panagiotou
Paolo Penna
Matthias Poloczek
Lars Prädel
Kirk Pruhs
Claude-Guy Quimper
Dror Rawitz
David Rizzuto
Christina Robenek
Alejandro Salinger
Guido Schaefer
Ilka Schnoor
Martin Skutella
Gwen Spencer
Ola Svensson
Chaitanya Swamy
Tami Tamir
Marc Uetz
Anke Van Zuylen
Jose Verschae
Haifeng Xu Lisa Zhang

Table of Contents