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Combinatorial Algorithms

21st International Workshop, IWOCA 2010
London, UK, July 26-28, 2010
Revised Selected Papers

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Preface

This volume contains the papers presented at IWOCA 2010: The 21st International Workshop on Combinatorial Algorithms. The 21st IWOCA was held in the Great Hall of the Strand Campus, King's College London (KCL), July 26–28, 2010. The meeting was sponsored and supported financially by KCL and the London Mathematical Society; it was hosted by the Algorithm Design Group in the KCL Department of Informatics. The local Organizing Committee, co-chaired by Tomasz Radzik and German Tischler, did an outstanding job; the Program Committee was co-chaired by Costas Iliopoulos and Bill Smyth.

The EasyChair system was used to facilitate management of submissions and refereeing, with three referees selected from the Program Committee assigned to each paper. Out of 85 contributed papers, a total of 31 were accepted, subject to revision, for presentation at the workshop and publication in the LNCS proceedings. An additional 13 papers were accepted for poster presentation, of which eight are included as four-page papers in the proceedings. Authors and titles of all 44 accepted papers are available at the IWOCA 2010 website. The workshop also featured a problem session, organized by Joe Ryan, and four invited talks by Alan Frieze, Gregory Kucherov, Mirka Miller, and Dorothea Wagner.

The number of participants in IWOCA 2010 more than doubled the number of speakers: altogether 75 researchers attended, affiliated to institutions in 20 different countries on five continents.

Here are brief summaries of the invited talks, in order of their presentation:

- (1) Mirka Miller, University of Newcastle, Australia: “Constructions of Large Graphs and Digraphs of Given Diameter and Maximum Degree” — a survey of recent progress in a research area with numerous practical applications, together with a knowledgeable outline and analysis of research directions likely to be significant in the future.
- (2) Dorothea Wagner, University of Karlsruhe, Germany: “Clustering of Static and Temporal Graph” — a survey of a research area with growing applications to networks of all kinds (for example, in the social sciences and biology), with particular focus on algorithmic aspects of quality measures for graph clustering.
- (3) Alan Frieze, Carnegie Mellon University, USA: “The Karp-Sipser Matching Algorithm and Refinements” — an analysis of a well-known greedy graph matching algorithm in the context of sparse random graphs, presenting new performance results and describing its application to finding a maximum matching.
- (4) Gregory Kucherov, J.-V. Poncelet Laboratory, Russia and Laboratoire d'Informatique Fondamentale de Lille, France: “Seeding Methods for Biosequence Search: Algorithmic Ideas and Applications” — a discussion of the use of spaced seeds as a technique for searching DNA sequences, describing a new

method for designing seeds adapted to different search situations, together with applications to protein search and mapping reads from high-throughput sequencing technology.

It was a warm summer in London, and the weather continued to cooperate throughout a delightful Thames cruise on the riverboat *Viscountess*, where the conference banquet was held.

Finally we would like to thank the members of the Program Committee and the subreferees for their fine work, their thorough reviews, their constructive and helpful comments.

December 2010

Costas S. Iliopoulos
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