

Preface

This volume contains the papers presented at SWAT 2006, the 10th Scandinavian Workshop on Algorithm Theory. The workshop, which is really a full-fledged international conference, is intended as a forum for researchers in the area of design and analysis of algorithms and data structures. Since 1988 SWAT has been held biennially in the five Nordic countries; it has a loose association with WADS (Workshop on Algorithms and Data Structures) that is held in odd-numbered years in North America. This 10th SWAT was held in the neighboring Baltic region. More precisely, it was held on July 6-8, 2006, at the Institute of Mathematics and Computer Science in the University of Latvia in Riga.

The call for papers invited contributions in all areas of algorithms and data structures, including approximation algorithms, computational biology, computational geometry, distributed algorithms, external-memory algorithms, graph algorithms, online algorithms, optimization algorithms, parallel algorithms, randomized algorithms, string algorithms and algorithmic game theory. A total of 154 papers were submitted, out of which the program committee selected 36 for presentation at the workshop. In addition, invited lectures were given by Kazuo Iwama (Kyoto University), Raimund Seidel (Universität des Saarlandes) and Robert E. Tarjan (Princeton University).

We would like to thank all the people who contributed to making SWAT 2006 a success. In particular, we thank the program committee and all of our many colleagues who helped the committee evaluate the submissions. We also thank Gerth S. Brodal for his invaluable help with the submission process and the program committee software.

May 2006

Lars Arge and Rusins Freivalds

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Top-Down Analysis of Path Compression: Deriving the Inverse-Ackermann Bound Naturally (and Easily)

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Results and Problems on Self-Adjusting Search Trees and Related Data Structures

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Classic and Quantum Network Coding

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Multiplexing Packets with Arbitrary Deadlines in Bounded Buffers

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Scheduling Jobs on Grid Processors^{*}

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Variable Sized Online Interval Coloring with Bandwidth

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A Simpler Linear-Time Recognition of Circular-Arc Graphs

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An $O(n^{2.75})$ algorithm for online topological ordering*

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Dynamic Matching Markets and Voting Paths^{*}

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Sorting by Merging or Merging by Sorting?

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Finding the position of the k -mismatch and approximate tandem repeats

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Unbiased Matrix Rounding

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Online, Non-preemptive Scheduling of Equal-length Jobs on Two Identical Machines*

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Paging with Request Sets

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Exponential time algorithms for the minimum dominating set problem on some graph classes

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Exact computation of maximum induced forest

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Fast subexponential algorithm for non-local problems on graphs of bounded genus

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On the Approximation Hardness of Some Generalizations of TSP*

(Extended Abstract)

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** This work was done while this author was visiting ETH Zurich.

Reoptimization of minimum and maximum traveling salesman's tours

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On Guarding Rectilinear Domains

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Approximation Algorithms for the Minimum Convex Partition Problem

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Approximation of Octilinear Steiner Trees Constrained by Hard and Soft Obstacles

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Simultaneous Embedding with Two Bends per Edge in Polynomial Area

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Acyclic Orientation of Drawings^{*}

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Improved Algorithms for Quantum Identification of Boolean Oracles

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Approximability of Minimum AND-Circuits*

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Triangles, 4-cycles and Parameterized (In-)Tractability

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Better Approximation Schemes for Disk Graphs^{*}

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An approximation algorithm for the Wireless Gathering Problem ^{*}

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Minimum Membership Set Covering and the Consecutive Ones Property

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Approximating Rational Objectives is as Easy as Approximating Linear Ones ^{*}

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In-Place Algorithms for Computing (Layers of) Maxima

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Largest and Smallest Tours and Convex Hulls for Imprecise Points ^{*}

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On Spanners of Geometric Graphs^{*}

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The Weighted Maximum-Mean Subtree and Other Bicriterion Subtree Problems

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Linear-Time Algorithms for Tree Root Problems

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Generalized Powers of Graphs and Their Algorithmic Use

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