

Xiaotie Deng
Dingzhu Du (Eds.)

LNC3 3827

Algorithms and Computation

16th International Symposium, ISAAC 2005
Sanya, Hainan, China, December 2005
Proceedings

 Springer

TP301.6-53

173

2005

Xiaotie Deng Dingzhu Du (Eds.)

Algorithms and Computation

16th International Symposium, ISAAC 2005
Sanya, Hainan, China, December 19-21, 2005
Proceedings



E200601384



Springer

Volume Editors

Xiaotie Deng

City University of Hong Kong, Department of Computer Science

83 Tat Chee Avenue, Kowloon Tong, Hong Kong SAR, China

E-mail: csdeng@cityu.edu.hk

Dingzhu Du

University of Minnesota, Department of Computer Science and Engineering

4-192 EE/CS Building, 200 Union Street S.E., Minneapolis, MN 55455, USA

E-mail: dzd@cs.umn.edu

Library of Congress Control Number: 2005937163

CR Subject Classification (1998): F.2, C.2, G.2-3, I.3.5, C.2.4, E.5

ISSN 0302-9743

ISBN-10 3-540-30935-7 Springer Berlin Heidelberg New York

ISBN-13 978-3-540-30935-2 Springer Berlin Heidelberg New York

This work is subject to copyright. All rights are reserved, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, re-use of illustrations, recitation, broadcasting, reproduction on microfilms or in any other way, and storage in data banks. Duplication of this publication or parts thereof is permitted only under the provisions of the German Copyright Law of September 9, 1965, in its current version, and permission for use must always be obtained from Springer. Violations are liable to prosecution under the German Copyright Law.

Springer is a part of Springer Science+Business Media

springer.com

© Springer-Verlag Berlin Heidelberg 2005

Printed in Germany

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

Printed on acid-free paper SPIN: 11602613 06/3142 5 4 3 2 1 0

Commenced Publication in 1973

Founding and Former Series Editors:

Gerhard Goos, Juris Hartmanis, and Jan van Leeuwen

Editorial Board

David Hutchison

Lancaster University, UK

Takeo Kanade

Carnegie Mellon University, Pittsburgh, PA, USA

Josef Kittler

University of Surrey, Guildford, UK

Jon M. Kleinberg

Cornell University, Ithaca, NY, USA

Friedemann Mattern

ETH Zurich, Switzerland

John C. Mitchell

Stanford University, CA, USA

Moni Naor

Weizmann Institute of Science, Rehovot, Israel

Oscar Nierstrasz

University of Bern, Switzerland

C. Pandu Rangan

Indian Institute of Technology, Madras, India

Bernhard Steffen

University of Dortmund, Germany

Madhu Sudan

Massachusetts Institute of Technology, MA, USA

Demetri Terzopoulos

New York University, NY, USA

Doug Tygar

University of California, Berkeley, CA, USA

Moshe Y. Vardi

Rice University, Houston, TX, USA

Gerhard Weikum

Max-Planck Institute of Computer Science, Saarbruecken, Germany

Preface

ISAAC 2005, the 16th International Symposium on Algorithms and Computation, took place in Hainan, China, December 19-21, 2005. The symposium provided a forum for researchers working in algorithms and the theory of computation from all over the world. The final count of electronic submissions was 549, of which 112 were accepted. Among them, the submitting authors' emails are: 18 from edu (USA) accounts, 14 from de (Germany), 10 from jp (Japan), 8 from fr (France), 8 from hk (Hong Kong), 7 from ca (Canada), 6 from cn (China), 5 from gr (Greece), 4 from gmail, 3 from tw (Taiwan), 3 from it (Italy), 3 from se (Sweden), 3 from sg (Singapore), 2 from cz (Czech Republic), 2 from ch (Switzerland), 2 from 163.com, and 1 each from no (Norway), uk (United Kingdom), be (Belgium), au (Australia), es (Spain), nl (The Netherlands), kr (Korea), in (India), il (Israel), cy (Cyprus), cl (Chile), pl (Poland), ie (Ireland), and net. This represents a total of 30 countries or regions, including 3 Internet dot coms.

We would like to thank the two invited speaker, Mihalis Yannakakis and Frances Y. Yao, for their insightful speeches and new directions in algorithms and computation.

We received 6 nominations for the best paper and 6 nominations for the best student paper. Only papers with all co-authors students could qualify for the latter. Unlike previous years, this year we made a decision after the authors made their presentation. We hope this change allowed the Program Committee to make the most informed decision.

We would like to thank the conference Co-chairs, Francis Chin and Frances Yao, for their leadership, advice and help on crucial matters concerning the conference. We would like to thank the International Program Committee for spending their valuable time and effort in the review process. We would also like to thank the Organizing Committee, led by Xiaodong Hu, for their contribution to making this conference a success.

In addition, we would like to thank those who spoke out on matters regarding the program and the organization, as well as other important ISAAC matters, and have provided invaluable feedback to ISAAC 2005.

Finally, we would like to thank our sponsors, the Academy of Mathematics and System Sciences of the Chinese Academy of Sciences, and to thank the Department of Computer Science, City University of Hong Kong, for the clerical support in handling the enormous amount of submissions and registrations.

December 2005

Xiaotie Deng
Dingzhu Du

Organization

ISAAC 2005 was jointly organized by the Academy of Mathematics and System Sciences of the Chinese Academy of Sciences, City University of Hong Kong, and the University of Hong Kong.

Conference Co-chairs

Francis Chin
Frances Yao

The University of Hong Kong
City University of Hong Kong

Organizing Committee

Xiaodong Hu (Chair)
Anthony Yingjie Fu

Chinese Academy of Sciences
City University of Hong Kong

Treasurer

Xiaohua Jia

City University of Hong Kong

Program Co-chairs

Xiaotie Deng
Dingzhu Du

City University of Hong Kong
University of Minnesota

Invited Speakers

Mihalis Yannakakis
Frances Yao

Columbia University
City University of Hong Kong

Program Committee

Sanjeev Arora
Tetsuo Asano
G. Ausiello
Carlo Blundo
Franz J. Brandenburg
Leizhen Cai
Mao-Cheng Cai
Jianer Chen
ZhiZhong Chen
Frank Dehne
Josep Diaz
Qizhi Fang
Haodi Feng
Rudolf Fleischer

Princeton University
JAIST
Università di Roma
Università di Salerno
Universität Passau
Chinese University of Hong Kong
Chinese Academy of Sciences
University of Texas A&M
Tokyo Denki University
Griffith University
Universitat Politècnica de Catalunya
Shandong University
Shandong University
Fudan University

Philippe Golle
 Monika Rauch Henzinger
 Toshihide Ibaraki
 Markus Jakobsson
 Elias Koutsoupias
 Hao Li
 Jianping Li
 Hsueh-I Lu
 Bin Ma
 Subhas C. Nandy
 Koji Nakano
 Rolf Niedermeier
 Christos Papadimitriou
 Kunihiko Sadakane
 Yaoyun Shi
 Xiaoming Sun
 Caoan Wang
 Xiaofeng Wang
 Mihalis Yannakakis
 Yinyu Ye
 Mingsheng Ying
 Guochuan Zhang
 Li Zhang
 Binhai Zhu

Palo Alto Research Center
 Google Corp.
 Kwansei Gakuin University
 Indiana University
 University of Athens
 Laboratoire de Recherche en Informatique
 Yunnan University
 National Taiwan University
 University of Western Ontario
 Indian Statistical Institute
 Hiroshima University
 Universität Jena
 University of California, Berkeley
 Kyushu University
 University of Michigan
 Tsinghua University
 Memorial University of Newfoundland
 Indiana University
 Columbia University
 Stanford University
 Tsinghua University
 Zhejiang University
 HP Corp.
 Montana State University

List of Subreferees

Marcos Aguilera
 Helmut Alt
 Arijit Bishnu
 Ching-Lueh Chang
 Ning Chen
 Ming-Yang Chen
 Tien-Ren Chen
 Hsueh-Yi Chen
 Shirley H.C. Cheung
 Kai-min Chung
 Vinay Deolalikar
 Stefan Dziembowski
 Jia-Hao Grant Fan
 Anthony Yingjie Fu
 Jens Gramm
 Falk Hüffner
 Jin-Ju Hong
 Yu-Hao Huang
 Yien-Lin Jyu
 Ming-Tat Ko

Susanne Albers
 Arne Andersson
 Andreas Brandstädt
 Hsun-Wen Chang
 Xi Chen
 Jian-Jia Chen
 Kuan-Lin Chen
 Ho-Lin Chen
 Hung Chim
 Sandip Das
 Michael Dom
 Thomas Erlebach
 Henning Fernau
 Hiroshi Fujiwara
 Jiong Guo
 Harald Hempel
 Chun-Hung Hsiao
 Jesper Jansson
 Ton Kloks
 Dieter Kratsch

Chien-Chih Liao
Wan-Chen Lu
Daniel Mölle
Daniel Marx
Hiro-taka Ono
Mindos Siskerodir
Douglas R. Stinson
Zuowen Tan
Jörg Vogel
Yin Wang
Hsin-Wen Bertha Wei
Deshi Ye
Yunlei Zhao
Feng Zou

Hong-Yiu Lin
Guanfeng Lv
Haiko Müller
Krishnendu Mukhopadhyaya
Md. Saidur Rahman
Andreas Spillner
Susmita Sur-Kolay
Salil Vadhan
Lusheng Wang
Zhikui Wang
Sebastian Wernicke
Hai Yu
Yunhong Zhou

Sponsors

Academy of Mathematics and System Sciences,
Chinese Academy of Sciences
Department of Computer Science, City University of Hong Kong

Best Paper Nominations

Embedding Point Sets Into Plane Graphs of Small Dilation

Annette Ebbers-Baumann, Ansgar Gruene, Marek Karpinski, Rolf Klein, Christian Knauer, Andrzej Lingas

Almost Optimal Solutions for Bin Coloring Problems

Mingen Lin, Zhiyong Lin, Jinhui Xu

Complexity and Approximation of the Minimum Recombination Haplotype Configuration Problem

Lan Liu, Xi Chen, Jing Xiao, Tao Jiang

A 1.5-Approximation of the Minimal Manhattan Network Problem

Sebastian Seibert, Walter Unger

Space Efficient Algorithms for Ordered Tree Comparison

Lusheng Wang, Kaizhong Zhang

The Layered Net Surface Problems in Discrete Geometry and Medical Image Segmentation

Xiaodong Wu, Danny Chen, Kang Li, Milan Sonka

Best Student Paper Nominations

Longest Increasing Subsequences in Windows Based on Canonical Antichain Partition

Erdong Chen, Hao Yuan, Linji Yang

On the Complexity of the G-Reconstruction Problem

Zdenek Dvorak, Vit Jelinek

A Practical Algorithm for the Computation of Market Equilibrium with Logarithmic Utility Functions

Li-Sha Huang

An Improved $\tilde{O}(1.234^m)$ -Time Deterministic Algorithm for SAT

Masaki Yamamoto

Improved Algorithms for Largest Cardinality 2-Interval Pattern Problem

Hao Yuan, Linji Yang, Erdong Chen

Algorithms for Local Forest Similarity

PENG, Zeshan

Lecture Notes in Computer Science

For information about Vols. 1–3739

please contact your bookseller or Springer

- Vol. 3838: A. Middeldorp, V. van Oostrom, F. van Raamsdonk, R. de Vrijer (Eds.), *Processes, Terms and Cycles: Steps on the Road to Infinity*. XVIII, 639 pages. 2005.
- Vol. 3837: K. Cho, P. Jacquet (Eds.), *Technologies for Advanced Heterogeneous Networks*. IX, 307 pages. 2005.
- Vol. 3835: G. Sutcliffe, A. Voronkov (Eds.), *Logic for Programming, Artificial Intelligence, and Reasoning*. XIV, 744 pages. 2005. (Subseries LNAI).
- Vol. 3833: K.-J. Li, C. Vangenot (Eds.), *Web and Wireless Geographical Information Systems*. XI, 309 pages. 2005.
- Vol. 3829: P. Pettersson, W. Yi (Eds.), *Formal Modeling and Analysis of Timed Systems*. IX, 305 pages. 2005.
- Vol. 3828: X. Deng, Y. Ye (Eds.), *Internet and Network Economics*. XVII, 1106 pages. 2005.
- Vol. 3827: X. Deng, D. Du (Eds.), *Algorithms and Computation*. XX, 1190 pages. 2005.
- Vol. 3826: B. Benatallah, F. Casati, P. Traverso (Eds.), *Service-Oriented Computing – ICSOC 2005*. XVIII, 597 pages. 2005.
- Vol. 3824: L.T. Yang, M. Amamiya, Z. Liu, M. Guo, F.J. Rammig (Eds.), *Embedded and Ubiquitous Computing – EUC 2005*. XXIII, 1204 pages. 2005.
- Vol. 3823: T. Enokido, L. Yan, B. Xiao, D. Kim, Y. Dai, L.T. Yang (Eds.), *Embedded and Ubiquitous Computing – EUC 2005 Workshops*. XXXII, 1317 pages. 2005.
- Vol. 3822: D. Feng, D. Lin, M. Yung (Eds.), *Information Security and Cryptology*. XII, 420 pages. 2005.
- Vol. 3821: R. Ramanujam, S. Sen (Eds.), *FSTTCS 2005: Foundations of Software Technology and Theoretical Computer Science*. XIV, 566 pages. 2005.
- Vol. 3820: L.T. Yang, X. Zhou, W. Zhao, Z. Wu, Y. Zhu, M. Lin (Eds.), *Embedded Software and Systems*. XXVIII, 779 pages. 2005.
- Vol. 3819: P. Van Hentenryck (Ed.), *Practical Aspects of Declarative Languages*. X, 231 pages. 2005.
- Vol. 3818: S. Grumbach, L. Sui, V. Vianu (Eds.), *Advances in Computer Science – ASIAN 2005*. XIII, 294 pages. 2005.
- Vol. 3815: E.A. Fox, E.J. Neuhold, P. Premssmit, V. Wuwongse (Eds.), *Digital Libraries: Implementing Strategies and Sharing Experiences*. XVII, 529 pages. 2005.
- Vol. 3814: M. Maybury, O. Stock, W. Wahlster (Eds.), *Intelligent Technologies for Interactive Entertainment*. XV, 342 pages. 2005. (Subseries LNAI).
- Vol. 3810: Y.G. Desmedt, H. Wang, Y. Mu, Y. Li (Eds.), *Cryptology and Network Security*. XI, 349 pages. 2005.
- Vol. 3809: S. Zhang, R. Jarvis (Eds.), *AI 2005: Advances in Artificial Intelligence*. XXVII, 1344 pages. 2005. (Subseries LNAI).
- Vol. 3808: C. Bento, A. Cardoso, G. Dias (Eds.), *Progress in Artificial Intelligence*. XVIII, 704 pages. 2005. (Subseries LNAI).
- Vol. 3807: M. Dean, Y. Guo, W. Jun, R. Kaschek, S. Krishnaswamy, Z. Pan, Q.Z. Sheng (Eds.), *Web Information Systems Engineering – WISE 2005 Workshops*. XV, 275 pages. 2005.
- Vol. 3806: A.H. H. Ngu, M. Kitsuregawa, E.J. Neuhold, J.-Y. Chung, Q.Z. Sheng (Eds.), *Web Information Systems Engineering – WISE 2005*. XXI, 771 pages. 2005.
- Vol. 3805: G. Subsol (Ed.), *Virtual Storytelling*. XII, 289 pages. 2005.
- Vol. 3804: G. Bebis, R. Boyle, D. Koracin, B. Parvin (Eds.), *Advances in Visual Computing*. XX, 755 pages. 2005.
- Vol. 3803: S. Jajodia, C. Mazumdar (Eds.), *Information Systems Security*. XI, 342 pages. 2005.
- Vol. 3802: Y. Hao, J. Liu, Y. Wang, Y.-m. Cheung, H. Yin, L. Jiao, J. Ma, Y.-C. Jiao (Eds.), *Computational Intelligence and Security, Part II*. XLII, 1166 pages. 2005. (Subseries LNAI).
- Vol. 3801: Y. Hao, J. Liu, Y. Wang, Y.-m. Cheung, H. Yin, L. Jiao, J. Ma, Y.-C. Jiao (Eds.), *Computational Intelligence and Security, Part I*. XLI, 1122 pages. 2005. (Subseries LNAI).
- Vol. 3799: M. A. Rodríguez, I.F. Cruz, S. Levashkin, M.J. Egenhofer (Eds.), *GeoSpatial Semantics*. X, 259 pages. 2005.
- Vol. 3798: A. Dearle, S. Eisenbach (Eds.), *Component Deployment*. X, 197 pages. 2005.
- Vol. 3797: S. Maitra, C. E. V. Madhavan, R. Venkatesan (Eds.), *Progress in Cryptology – INDOCRYPT 2005*. XIV, 417 pages. 2005.
- Vol. 3796: N.P. Smart (Ed.), *Cryptography and Coding*. XI, 461 pages. 2005.
- Vol. 3795: H. Zhuge, G.C. Fox (Eds.), *Grid and Cooperative Computing – GCC 2005*. XXI, 1203 pages. 2005.
- Vol. 3794: X. Jia, J. Wu, Y. He (Eds.), *Mobile Ad-hoc and Sensor Networks*. XX, 1136 pages. 2005.
- Vol. 3793: T. Conte, N. Navarro, W.-m. W. Hwu, M. Valero, T. Ungerer (Eds.), *High Performance Embedded Architectures and Compilers*. XIII, 317 pages. 2005.
- Vol. 3792: I. Richardson, P. Abrahamsson, R. Messnarz (Eds.), *Software Process Improvement*. VIII, 215 pages. 2005.
- Vol. 3791: A. Adi, S. Stoutenburg, S. Tabet (Eds.), *Rules and Rule Markup Languages for the Semantic Web*. X, 225 pages. 2005.
- Vol. 3790: G. Alonso (Ed.), *Middleware 2005*. XIII, 443 pages. 2005.

- Vol. 3789: A. Gelbukh, Á. de Albornoz, H. Terashima-Marín (Eds.), *MICA1 2005: Advances in Artificial Intelligence*. XXVI, 1198 pages. 2005. (Subseries LNAI).
- Vol. 3788: B. Roy (Ed.), *Advances in Cryptology - ASIACRYPT 2005*. XIV, 703 pages. 2005.
- Vol. 3785: K.-K. Lau, R. Banach (Eds.), *Formal Methods and Software Engineering*. XIV, 496 pages. 2005.
- Vol. 3784: J. Tao, T. Tan, R.W. Picard (Eds.), *Affective Computing and Intelligent Interaction*. XIX, 1008 pages. 2005.
- Vol. 3783: S. Qing, W. Mao, J. Lopez, G. Wang (Eds.), *Information and Communications Security*. XIV, 492 pages. 2005.
- Vol. 3781: S.Z. Li, Z. Sun, T. Tan, S. Pankanti, G. Chollet, D. Zhang (Eds.), *Advances in Biometric Person Authentication*. XI, 250 pages. 2005.
- Vol. 3780: K. Yi (Ed.), *Programming Languages and Systems*. XI, 435 pages. 2005.
- Vol. 3779: H. Jin, D. Reed, W. Jiang (Eds.), *Network and Parallel Computing*. XV, 513 pages. 2005.
- Vol. 3778: C. Atkinson, C. Bunse, H.-G. Gross, C. Peper (Eds.), *Component-Based Software Development for Embedded Systems*. VIII, 345 pages. 2005.
- Vol. 3777: O.B. Lupanov, O.M. Kasim-Zade, A.V. Chaskin, K. Steinhöfel (Eds.), *Stochastic Algorithms: Foundations and Applications*. VIII, 239 pages. 2005.
- Vol. 3776: S.K. Pal, S. Bandyopadhyay, S. Biswas (Eds.), *Pattern Recognition and Machine Intelligence*. XXIV, 808 pages. 2005.
- Vol. 3775: J. Schönwälder, J. Serrat (Eds.), *Ambient Networks*. XIII, 281 pages. 2005.
- Vol. 3774: G. Bierman, C. Koch (Eds.), *Database Programming Languages*. X, 295 pages. 2005.
- Vol. 3773: A. Sanfeliu, M.L. Cortés (Eds.), *Progress in Pattern Recognition, Image Analysis and Applications*. XX, 1094 pages. 2005.
- Vol. 3772: M. Consens, G. Navarro (Eds.), *String Processing and Information Retrieval*. XIV, 406 pages. 2005.
- Vol. 3771: J.M.T. Romijn, G.P. Smith, J. van de Pol (Eds.), *Integrated Formal Methods*. XI, 407 pages. 2005.
- Vol. 3770: J. Akoka, S.W. Liddle, I.-Y. Song, M. Bertolotto, I. Comyn-Wattiau, W.-J. van den Heuvel, M. Kolp, J. Trujillo, C. Kop, H.C. Mayr (Eds.), *Perspectives in Conceptual Modeling*. XXII, 476 pages. 2005.
- Vol. 3769: D.A. Bader, M. Parashar, V. Sridhar, V.K. Prasanna (Eds.), *High Performance Computing - HiPC 2005*. XXVIII, 550 pages. 2005.
- Vol. 3768: Y.-S. Ho, H.J. Kim (Eds.), *Advances in Multimedia Information Processing - PCM 2005, Part II*. XXVIII, 1088 pages. 2005.
- Vol. 3767: Y.-S. Ho, H.J. Kim (Eds.), *Advances in Multimedia Information Processing - PCM 2005, Part I*. XXVIII, 1022 pages. 2005.
- Vol. 3766: N. Sebe, M.S. Lew, T.S. Huang (Eds.), *Computer Vision in Human-Computer Interaction*. X, 231 pages. 2005.
- Vol. 3765: Y. Liu, T. Jiang, C. Zhang (Eds.), *Computer Vision for Biomedical Image Applications*. X, 563 pages. 2005.
- Vol. 3764: S. Tixeuil, T. Herman (Eds.), *Self-Stabilizing Systems*. VIII, 229 pages. 2005.
- Vol. 3762: R. Meersman, Z. Tari, P. Herrero (Eds.), *On the Move to Meaningful Internet Systems 2005: OTM 2005 Workshops*. XXXI, 1228 pages. 2005.
- Vol. 3761: R. Meersman, Z. Tari (Eds.), *On the Move to Meaningful Internet Systems 2005: CoopIS, DOA, and ODBASE, Part II*. XXVII, 653 pages. 2005.
- Vol. 3760: R. Meersman, Z. Tari (Eds.), *On the Move to Meaningful Internet Systems 2005: CoopIS, DOA, and ODBASE, Part I*. XXVII, 921 pages. 2005.
- Vol. 3759: G. Chen, Y. Pan, M. Guo, J. Lu (Eds.), *Parallel and Distributed Processing and Applications - ISPA 2005 Workshops*. XIII, 669 pages. 2005.
- Vol. 3758: Y. Pan, D.-x. Chen, M. Guo, J. Cao, J.J. Dongarra (Eds.), *Parallel and Distributed Processing and Applications*. XXIII, 1162 pages. 2005.
- Vol. 3757: A. Rangarajan, B. Vemuri, A.L. Yuille (Eds.), *Energy Minimization Methods in Computer Vision and Pattern Recognition*. XII, 666 pages. 2005.
- Vol. 3756: J. Cao, W. Nejdl, M. Xu (Eds.), *Advanced Parallel Processing Technologies*. XIV, 526 pages. 2005.
- Vol. 3754: J. Dalmau Royo, G. Hasegawa (Eds.), *Management of Multimedia Networks and Services*. XII, 384 pages. 2005.
- Vol. 3753: O.F. Olsen, L.M.J. Florack, A. Kuijper (Eds.), *Deep Structure, Singularities, and Computer Vision*. X, 259 pages. 2005.
- Vol. 3752: N. Paragios, O. Faugeras, T. Chan, C. Schnörr (Eds.), *Variational, Geometric, and Level Set Methods in Computer Vision*. XI, 369 pages. 2005.
- Vol. 3751: T. Magedanz, E.R. M. Madeira, P. Dini (Eds.), *Operations and Management in IP-Based Networks*. X, 213 pages. 2005.
- Vol. 3750: J.S. Duncan, G. Gerig (Eds.), *Medical Image Computing and Computer-Assisted Intervention - MICCAI 2005, Part II*. XL, 1018 pages. 2005.
- Vol. 3749: J.S. Duncan, G. Gerig (Eds.), *Medical Image Computing and Computer-Assisted Intervention - MICCAI 2005, Part I*. XXXIX, 942 pages. 2005.
- Vol. 3748: A. Hartman, D. Kreishe (Eds.), *Model Driven Architecture - Foundations and Applications*. IX, 349 pages. 2005.
- Vol. 3747: C.A. Maziero, J.G. Silva, A.M.S. Andrade, F.M.d. Assis Silva (Eds.), *Dependable Computing*. XV, 267 pages. 2005.
- Vol. 3746: P. Bozanis, E.N. Houstis (Eds.), *Advances in Informatics*. XIX, 879 pages. 2005.
- Vol. 3745: J.L. Oliveira, V. Maojo, F. Martín-Sánchez, A.S. Pereira (Eds.), *Biological and Medical Data Analysis*. XII, 422 pages. 2005. (Subseries LNBI).
- Vol. 3744: T. Magedanz, A. Karmouch, S. Pierre, I. Vennieris (Eds.), *Mobility Aware Technologies and Applications*. XIV, 418 pages. 2005.
- Vol. 3742: J. Akiyama, M. Kano, X. Tan (Eds.), *Discrete and Computational Geometry*. VIII, 213 pages. 2005.
- Vol. 3740: T. Srikanthan, J. Xue, C.-H. Chang (Eds.), *Advances in Computer Systems Architecture*. XVII, 833 pages. 2005.

¥1000.64元

Table of Contents

Algorithmic Problems in Wireless Ad Hoc Networks <i>Frances F. Yao</i>	1
Probability and Recursion <i>Kousha Etessami, Mihalis Yannakakis</i>	2
Embedding Point Sets into Plane Graphs of Small Dilation <i>Annette Ebbers-Baumann, Ansgar Grüne, Marek Karpinski, Rolf Klein, Christian Knauer, Andrzej Lingas</i>	5
The Layered Net Surface Problems in Discrete Geometry and Medical Image Segmentation <i>Xiaodong Wu, Danny Z. Chen, Kang Li, Milan Sonka</i>	17
Separability with Outliers <i>Sariel Har-Peled, Vladlen Koltun</i>	28
Casting an Object with a Core <i>Hee-Kap Ahn, Sang Won Bae, Siu-Wing Cheng, Kyung-Yong Chwa</i>	40
Sparse Geometric Graphs with Small Dilation <i>Boris Aronov, Mark de Berg, Otfried Cheong, Joachim Gudmundsson, Herman Haverkort, Antoine Vigneron</i>	50
Multiple Polyline to Polygon Matching <i>Mirela Tănase, Remco C. Velthkamp, Herman Haverkort</i>	60
Minimizing a Monotone Concave Function with Laminar Covering Constraints <i>Mariko Sakashita, Kazuhisa Makino, Satoru Fujishige</i>	71
Almost Optimal Solutions for Bin Coloring Problems <i>Mingen Lin, Zhiyong Lin, Jinhui Xu</i>	82
GEN-LARAC: A Generalized Approach to the Constrained Shortest Path Problem Under Multiple Additive Constraints <i>Ying Xiao, Krishnaiyan Thulasiraman, Guoliang Xue</i>	92
Simultaneous Matchings <i>Khaled Elbassioni, Irit Katriel, Martin Kutz, Meena Mahajan</i>	106

An Optimization Problem Related to VoD Broadcasting <i>Tsunehiko Kameda, Yi Sun, Luis Goddyn</i>	116
A Min-Max Relation on Packing Feedback Vertex Sets <i>Xujin Chen, Guoli Ding, Xiaodong Hu, Wenan Zang</i>	126
Average Case Analysis for Tree Labelling Schemes <i>Ming-Yang Kao, Xiang-Yang Li, WeiZhao Wang</i>	136
Revisiting T. Uno and M. Yagiura's Algorithm <i>Binh-Minh Bui Xuan, Michel Habib, Christophe Paul</i>	146
Generating Cut Conjunctions and Bridge Avoiding Extensions in Graphs <i>Leonid Khachiyan, Endre Boros, Konrad Borys, Khaled Elbassioni, Vladimir Gurvich, Kazuhisa Makino</i>	156
Orthogonal Drawings of Series-Parallel Graphs with Minimum Bends <i>Xiao Zhou, Takao Nishizeki</i>	166
Bisecting a Four-Connected Graph with Three Resource Sets <i>Toshimasa Ishii, Kengo Iwata, Hiroshi Nagamochi</i>	176
Laminar Structure of Ptolemaic Graphs and Its Applications <i>Ryuhei Uehara, Yushi Uno</i>	186
On the Complexity of the G -Reconstruction Problem <i>Zdeněk Dvořák, Vít Jelínek</i>	196
Hybrid Voting Protocols and Hardness of Manipulation <i>Edith Elkind, Helger Lipmaa</i>	206
On the Complexity of Rocchio's Similarity-Based Relevance Feedback Algorithm <i>Zhixiang Chen, Bin Fu</i>	216
Correlation Clustering and Consensus Clustering <i>Paola Bonizzoni, Gianluca Della Vedova, Riccardo Dondi, Tao Jiang</i>	226
An Approximation Algorithm for Scheduling Malleable Tasks Under General Precedence Constraints <i>Klaus Jansen, Hu Zhang</i>	236
A 1.5-Approximation of the Minimal Manhattan Network Problem <i>Sebastian Seibert, Walter Unger</i>	246

Hardness and Approximation of Octilinear Steiner Trees <i>Matthias Müller-Hannemann, Anna Schulze</i>	256
Dense Subgraph Problems with Output-Density Conditions <i>Akiko Suzuki, Takeshi Tokuyama</i>	266
A Complete Characterization of Tolerable Adversary Structures for Secure Point-to-Point Transmissions Without Feedback <i>Yvo Desmedt, Yongge Wang, Mike Burmester</i>	277
Network Game with Attacker and Protector Entities <i>Marios Mavronicolas, Vicky Papadopoulou, Anna Philippou, Paul Spirakis</i>	288
SkipTree: A Scalable Range-Queryable Distributed Data Structure for Multidimensional Data <i>Saeed Alaei, Mohammad Toossi, Mohammad Ghodsi</i>	298
The Phase Matrix <i>Peter Høyer</i>	308
ISB-Tree: A New Indexing Scheme with Efficient Expected Behaviour <i>Alexis Kaporis, Christos Makris, George Mavritsakis, Spyros Sioutas, Athanasios Tsakalidis, Kostas Tsihlias, Christos Zaroliagis</i>	318
External Data Structures for Shortest Path Queries on Planar Digraphs <i>Lars Arge, Laura Toma</i>	328
Improved Approximate String Matching Using Compressed Suffix Data Structures <i>Tak-Wah Lam, Wing-Kin Sung, Swee-Seong Wong</i>	339
Monitoring Continuous Band-Join Queries over Dynamic Data <i>Pankaj K. Agarwal, Junyi Xie, Jun Yang, Hai Yu</i>	349
Approximate Colored Range Queries <i>Ying Kit Lai, Chung Keung Poon, Benyun Shi</i>	360
Complexity and Approximation of the Minimum Recombination Haplotype Configuration Problem <i>Lan Liu, Xi Chen, Jing Xiao, Tao Jiang</i>	370
Space Efficient Algorithms for Ordered Tree Comparison <i>Lusheng Wang, Kaizhong Zhang</i>	380

A 1.75-Approximation Algorithm for Unsigned Translocation Distance <i>Yun Cui, Lusheng Wang, Daming Zhu</i>	392
Fast Algorithms for Computing the Tripartition-Based Distance Between Phylogenetic Networks <i>Nguyen Bao Nguyen, Cam Thach Nguyen, Wing-Kin Sung</i>	402
Improved Algorithms for Largest Cardinality 2-Interval Pattern Problem <i>Hao Yuan, Linji Yang, Erdong Chen</i>	412
Preemptive Semi-online Scheduling on Parallel Machines with Inexact Partial Information <i>Yong He, Yiwei Jiang</i>	422
On-Line Computation and Maximum-Weighted Hereditary Subgraph Problems <i>Marc Demange, Bernard Kouakou, Éric Soutif</i>	433
A Novel Adaptive Learning Algorithm for Stock Market Prediction <i>Lean Yu, Shouyang Wang, Kin Keung Lai</i>	443
Uniformization of Discrete Data <i>Lei Yang</i>	453
A Practical Algorithm for the Computation of Market Equilibrium with Logarithmic Utility Functions <i>Li-Sha Huang</i>	463
Boosting Spectral Partitioning by Sampling and Iteration <i>Joachim Giesen, Dieter Mitsche</i>	473
Smoothed Analysis of Binary Search Trees <i>Bodo Manthey, Rüdiger Reischuk</i>	483
Simple and Efficient Greedy Algorithms for Hamilton Cycles in Random Intersection Graphs <i>Christoforos Raptopoulos, Paul Spirakis</i>	493
Counting Distinct Items over Update Streams <i>Sumit Ganguly</i>	505
Randomized Algorithm for the Sum Selection Problem <i>Tien-Ching Lin, D.T. Lee</i>	515

An Improved Interval Routing Scheme for Almost All Networks Based on Dominating Cliques <i>Martin Nehéz, Daniel Olejár</i>	524
Basic Computations in Wireless Networks <i>Ioannis Caragiannis, Clemente Galdi, Christos Kaklamanis</i>	533
A Simple Optimal Randomized Algorithm for Sorting on the PDM <i>Sanguthevar Rajasekaran, Sandeep Sen</i>	543
Efficient Parallel Algorithms for Constructing a k -Tree Center and a k -Tree Core of a Tree Network <i>Yan Wang, Deqiang Wang, Wei Liu, Baoyu Tian</i>	553
A Tight Bound on the Number of Mobile Servers to Guarantee the Mutual Transferability Among Dominating Configurations <i>Satoshi Fujita</i>	563
Bounding the Number of Minimal Dominating Sets: A Measure and Conquer Approach <i>Fedor V. Fomin, Fabrizio Grandoni, Artem V. Pyatkin, Alexey A. Stepanov</i>	573
Collective Tree Spanners in Graphs with Bounded Genus, Chordality, Tree-Width, or Clique-Width <i>Feodor F. Dragan, Chenyu Yan</i>	583
Sampling Unlabeled Biconnected Planar Graphs <i>Manuel Bodirsky, Clemens Gröpl, Mihyun Kang</i>	593
Configurations with Few Crossings in Topological Graphs <i>Christian Knauer, Étienne Schramm, Andreas Spillner, Alexander Wolff</i>	604
On Bounded Load Routings for Modeling k -Regular Connection Topologies <i>Adrian Kosowski, Michał Mańafiejski, Paweł Żyliński</i>	614
On the Complexity of Global Constraint Satisfaction <i>Cristina Bazgan, Marek Karpinski</i>	624
Polynomial Space Suffices for Deciding Nash Equilibria Properties for Extensive Games with Large Trees <i>Carme Álvarez, Joaquim Gabarró, Maria Serna</i>	634

An Improved $\tilde{O}(1.234^m)$ -Time Deterministic Algorithm for SAT <i>Masaki Yamamoto</i>	644
Solving Minimum Weight Exact Satisfiability in Time $O(2^{0.2441n})$ <i>Stefan Porschen</i>	654
Efficient Algorithms for Finding a Longest Common Increasing Subsequence <i>Wun-Tat Chan, Yong Zhang, Stanley P.Y. Fung, Deshi Ye, Hong Zhu</i>	665
Decision Making Based on Approximate and Smoothed Pareto Curves <i>Heiner Ackermann, Alantha Newman, Heiko Röglin, Berthold Vöcking</i>	675
Computing Optimal Solutions for the MIN 3-SET COVERING Problem <i>Federico Della Croce, Vangelis Th. Paschos</i>	685
Efficient Algorithms for the Weighted 2-Center Problem in a Cactus Graph <i>Boaz Ben-Moshe, Binay Bhattacharya, Qiaosheng Shi</i>	693
Algorithms for Local Forest Similarity <i>Zeshan Peng</i>	704
Fast Algorithms for Finding Disjoint Subsequences with Extremal Densities <i>Anders Bergkvist, Peter Damaschke</i>	714
A Polynomial Space and Polynomial Delay Algorithm for Enumeration of Maximal Motifs in a Sequence <i>Hiroki Arimura, Takeaki Uno</i>	724
5-th Phylogenetic Root Construction for Strictly Chordal Graphs <i>William Kennedy, Guohui Lin</i>	738
Recursion Theoretic Operators for Function Complexity Classes <i>Kenya Ueno</i>	748
From Balls and Bins to Points and Vertices <i>Ralf Klasing, Zvi Lotker, Alfredo Navarra, Stephane Perennes</i>	757
Simulating Undirected st -Connectivity Algorithms on Uniform JAGs and NNJAGs <i>Pinyan Lu, Jialin Zhang, Chung Keung Poon, Jin-Yi Cai</i>	767