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| Soggetti                | Computer programming<br>Algorithms<br>Computer science - Mathematics<br>Discrete mathematics<br>Numerical analysis<br>Computer graphics<br>Bioinformatics<br>Programming Techniques<br>Discrete Mathematics in Computer Science<br>Numerical Analysis<br>Computer Graphics<br>Computational and Systems Biology  |
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| Nota di bibliografia    | Includes bibliographical references and index.   |
| Nota di contenuto       | Geometric Algorithms for the Constrained 1-D K-Means Clustering Problems and IMRT Applications -- A Fast Preprocessing Algorithm to Select Gene-Specific Probes of DNA Microarrays -- Approximation Algorithms for a Point-to-Surface Registration Problem in Medical Navigation -- Biometric Digital Signature Key Generation and Cryptography Communication Based on Fingerprint -- New Algorithms for the Spaced Seeds -- Region-Based Selective Encryption for Medical |

Imaging -- Extracting Information of Anti-AIDS Inhibitor from the Biological Literature Based on Ontology -- A Novel Biology-Based Reversible Data Hiding Fusion Scheme -- On the Approximation and Smoothed Complexity of Leontief Market Equilibria -- On Coordination Among Multiple Auctions -- The On-Line Rental Problem with Risk and Probabilistic Forecast -- Distributed Planning for the On-Line Dial-a-Ride Problem -- Maximizing the Number of Independent Labels in the Plane -- On the Fractional Chromatic Number of Monotone Self-dual Boolean Functions -- On the Complexity of Approximation Streaming Algorithms for the k-Center Problem -- Scheduling an Unbounded Batch Machine to Minimize Maximum Lateness -- A Non-interleaving Denotational Semantics of Value Passing CCS with Action Refinement -- Constraints Solution for Time Sensitive Security Protocols -- Using Bit Selection to Do Routing Table Lookup -- A New Fuzzy Decision Tree Classification Method for Mining High-Speed Data Streams Based on Binary Search Trees -- Hamiltonian Property on Binary Recursive Networks -- A Performance Guaranteed New Algorithm for Fault-Tolerant Routing in Folded Cubes -- Pathologic Region Detection Algorithm for Prostate Ultrasonic Image Based on PCNN -- A Novel Heuristic Approach for Job Shop Scheduling Problem -- An Efficient Physically-Based Model for Chinese Brush -- A Trigram Statistical Language Model Algorithm for Chinese Word Segmentation -- An  $O(nm)$ -Time Certifying Algorithm for Recognizing HHD-Free Graphs -- Easy Problems for Grid-Structured Graphs -- Long Alternating Cycles in Edge-Colored Complete Graphs -- Notes on Fractional  $(1,f)$ -Odd Factors of Graphs -- Some New Structural Properties of Shortest 2-Connected Steiner Networks -- The Parameterized Complexity of the Induced Matching Problem in Planar Graphs -- Removable Edges of a Spanning Tree in 3-Connected 3-Regular Graphs.

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## Sommario/riassunto

FAW 2007, the 1st International "Frontiers in Algorithmics Workshop" took place in Lanzhou, China, August 1-3, 2007. The FAW symposium aims to provide a focused forum on current trends in research on algorithms, discrete structures, and their applications, and to bring together international experts at the research frontiers in those areas so as to exchange ideas and to present significant new results. In response to the Call for Papers, a total of 141 papers were submitted from 16 countries and regions, of which 33 were accepted. These papers were selected for nine special focus tracks in the areas of bioinformatics, discrete structures, geometric information processing and communication, games and incentive analysis, graph algorithms, Internet algorithms and protocols, parameterized algorithms, design and analysis of heuristics, approximate and online algorithms, and algorithms in medical applications.

We would like to thank the Conference General Chair, Maocheng Cai and Hao Li, and Advising Committee Chair, Danny Chen, for their leadership, advice and help on crucial matters concerning the conference. We would like to thank the International Program Committee and the external referees for spending their valuable time and effort in the review process. It was a wonderful experience to work with them. Finally, we would like to thank the Organizing Committee, led by Lian Li and Xiaotie Deng, for their contribution to making this conference a success. We would also like to thank our sponsors, the ICCM Laboratory of Lanzhou University, for kindly offering the financial and clerical support that made the conference possible and enjoyable.

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