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	Nota di contenuto	Preface -- Abstracts -- Contributors -- 1. Generating All and Random Instances of A combinatorial Object (Ivan Stojmenovic) -- 2. Backtracking and Isomorph-Free Generation of Polyhexes (Lucia Moura and Ivan Stojmenovic) -- 3. Graph Theoretic Models in Chemistry and Molecular Biology (Debra Knisley and Jeff Knisley) -- 4. Algorithmic Methods for the Analysis of Gene Expression Data (Hongbo Xie, Uros Midic, Slobodan Vucetic, and Zoran Obradovic) -- 5. Algorithms of Reaction-Diffusion Computing (Andrew Adamatzky) -- 6. Data Mining Algorithms I: Clustering (Dan A. Simovici) -- 7. Data Mining Algorithms II: Frequent Item Sets (Dan A. Simovici) -- 8. Algorithms for Data Streams (Camil Demetrescu and Irene Finocchi) -- 9. Applying Evolutionary Algorithms to Solve the Automatic Frequency Planning Problem (Francisco Luna, Enrique Alba, Antonio J. Nero, Patrick Nauru, and Salvador Pedraza) -- 10. Algorithmic Game Theory and Applications(Marios Mavronicolas, Vicky Papdopoulou, and Paul Spirakis) -- 11. Algorithms for Real-Time Object Detection in Images (Milos Stojmenovic) -- 12. 2D Shape Measures for Computer Vision (Paul L.

Rosin and Jovisa Zunic) -- 13. Cryptographic Algorithms (Binal Roy and Amiya Nayak) -- 14. Secure Communication in Distributed Sensor Networks (DSN) (Subhamoy Maitra and Bimal Roy) -- 15. Localized Topology Control Algorithms for Ad Hoc and Sensor Networks (Hannes Frey and David Simplot-Ryl) -- 16. A Novel Admission Control for Multimedia LEO Satellite Networks (Syed R. Rizvi, Stephan Olariu, and Mona E. Rizvi) -- 17. Resilient Recursive Routing in Communication Networks (Costas C. Constantinou, Alexander S. Stepanenko, Theodoros N. Arvanitis, Kevin J. Baughan, and Bin Liu) -- 18. Routing Algorithms on WDM Optical Networks (Qian-Ping Gu) -- Index.

Sommario/riassunto	Discover the benefits of applying algorithms to solve scientific, engineering, and practical problems Providing a combination of theory, algorithms, and simulations, Handbook of Applied Algorithms presents an all-encompassing treatment of applying algorithms and discrete mathematics to practical problems in "hot" application areas, such as computational biology, computational chemistry, wireless networks, and computer vision. In eighteen self-contained chapters, this timely book explores: * Localized algorithms that can be used in topology control for wireless ad-hoc or sensor networks * Bioinformatics algorithms for analyzing data * Clustering algorithms and identification of association rules in data mining * Applications of combinatorial algorithms and graph theory in chemistry and molecular biology * Optimizing the frequency planning of a GSM network using evolutionary algorithms * Algorithmic solutions and advances achieved through game theory Complete with exercises for readers to measure their comprehension of the material presented, Handbook of Applied Algorithms is a much-needed resource for researchers, practitioners, and students within computer science, life science, and engineering. Amiya Nayak, PhD, has over seventeen years of industrial experience and is Full Professor at the School of Information Technology and Engineering at the University of Ottawa, Canada. He is on the editorial board of several journals. Dr. Nayak's research interests are in the areas of fault tolerance, distributed systems/algorithms, and mobile ad-hoc networks. Ivan StojmenoviC?, PhD, is Professor at the University of Ottawa, Canada (www.site.uottawa.ca/~ivan), and Chair Professor of Applied Computing at the University of Birmingham, United Kingdom. Dr. Stojmenovic? received the Royal Society Wolfson Research Merit Award. His current research interests are mostly in the design and analysis of algorithms for wireless ad-hoc and sensor networks.