

1. Record Nr.	UNINA9910145416003321
Titolo	Bioinformatics algorithms [[electronic resource]] : techniques and applications // edited by Ion I. Mandoiu and Alexander Zelikovsky
Pubbl/distr/stampa	Hoboken, N.J., : Wiley-Interscience, c2008
ISBN	1-281-23744-2 9786611237448 0-470-25344-4 0-470-25342-8
Descrizione fisica	1 online resource (517 p.)
Collana	Wiley series on bioinformatics
Altri autori (Persone)	Mandoiulon ZelikovskyAlexander
Disciplina	572.80285
Soggetti	Bioinformatics Algorithms
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	BIOINFORMATICS ALGORITHMS; CONTENTS; Preface; Contributors; 1 Educating Biologists in the 21st Century: Bioinformatics Scientists versus Bioinformatics Technicians; PART I TECHNIQUES; 2 Dynamic Programming Algorithms for Biological Sequence and Structure Comparison; 3 Graph Theoretical Approaches to Delineate Dynamics of Biological Processes; 4 Advances in Hidden Markov Models for Sequence Annotation; 5 Sorting- and FFT-Based Techniques in the Discovery of Biopatterns; 6 A Survey of Seeding for Sequence Alignment; 7 The Comparison of Phylogenetic Networks: Algorithms and Complexity PART II GENOME AND SEQUENCE ANALYSIS8 Formal Models of Gene Clusters; 9 Integer Linear Programming Techniques for Discovering Approximate Gene Clusters; 10 Efficient Combinatorial Algorithms for DNA Sequence Processing; 11 Algorithms for Multiplex PCR Primer Set Selection with Amplification Length Constraints; 12 Recent Developments in Alignment and Motif Finding for Sequences and Networks; PART III MICROARRAY DESIGN AND DATA ANALYSIS; 13 Algorithms for Oligonucleotide Microarray Layout; 14 Classification

Accuracy Based Microarray Missing Value Imputation; 15 Meta-Analysis of Microarray Data
PART IV GENETIC VARIATION ANALYSIS 16 Phasing Genotypes Using a Hidden Markov Model; 17 Analytical and Algorithmic Methods for Haplotype Frequency Inference: What Do They Tell Us?; 18 Optimization Methods for Genotype Data Analysis in Epidemiological Studies; PART V STRUCTURAL AND SYSTEMS BIOLOGY; 19 Topological Indices in Combinatorial Chemistry; 20 Efficient Algorithms for Structural Recall in Databases; 21 Computational Approaches to Predict Protein-Protein and Domain-Domain Interactions; Index

Sommario/riassunto

Presents algorithmic techniques for solving problems in bioinformatics, including applications that shed new light on molecular biology This book introduces algorithmic techniques in bioinformatics, emphasizing their application to solving novel problems in post-genomic molecular biology. Beginning with a thought-provoking discussion on the role of algorithms in twenty-first-century bioinformatics education, Bioinformatics Algorithms covers: General algorithmic techniques, including dynamic programming, graph-theoretical methods, hidden Markov models, the fast Fourier transform, se
