Record Nr. UNINA9910816632503321 Autore He Matthew Titolo Mathematics of bioinformatics: theory, methods, and applications // Matthew He, Sergey Petoukhov Hoboken, NJ,: Wiley-Interscience, 2011 Pubbl/distr/stampa **ISBN** 1-118-09952-4 1-283-02531-0 9786613025319 0-470-90463-1 0-470-90464-X Descrizione fisica 1 online resource (317 p.) Collana Wiley series in bioinformatics;; 11 Classificazione COM082000 Altri autori (Persone) PetukhovS. V (Sergei Valentinovich) Disciplina 572/.330285 Soggetti **Bioinformatics Biomathematics** Computational biology 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 MATHEMATICS OF BIOINFORMATICS; CONTENTS; PREFACE; ABOUT THE AUTHORS; 1: Bioinformatics and Mathematics; 2: Genetic Codes, Matrices, and Symmetrical Techniques; 3: Biological Sequences, Sequence Alignment, and Statistics; 4: Structures of DNA and Knot Theory; 5: Protein Structures, Geometry, and Topology; 6: Biological Networks and Graph Theory: 7: Biological Systems, Fractals, and Systems Biology: 8: Matrix Genetics, Hadamard Matrices, and Algebraic Biology; 9: Bioinformatics, Denotational Mathematics, and Cognitive Informatics; 10 Evolutionary Trends and Central Dogma of Informatics APPENDIX A: Bioinformatics Notation and DatabasesAPPENDIX B: Bioinformatics and Genetics Time Line; APPENDIX C: Bioinformatics Glossary: INDEX Sommario/riassunto "Mathematics of Bioinformatics: Theory, Methods, and Applications provides a comprehensive format for connecting and integrating information derived from mathematical methods and applying it to the

understanding of biological sequences, structures, and networks. Each

chapter is divided into a number of sections based on the

bioinformatics topics and related mathematical theory and methods. Each topic of the section is comprised of the following three parts: an introduction to the biological problems in bioinformatics; a presentation of relevant topics of mathematical theory and methods to the bioinformatics problems introduced in the first part; an integrative overview that draws the connections and interfaces between bioinformatics problems/issues and mathematical theory/methods/applications"--