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Nota di contenuto	Cover -- Title Page -- Copyright Page -- Contents in Brief -- Contents -- Preface to the Third Edition -- About the Companion Website -- Part I Analyzing DNA, RNA, and Protein Sequences -- 1 Introduction -- 2 Access to Sequence Data and Related Information -- 3 Pairwise Sequence Alignment -- 4 Basic Local Alignment Search Tool (BLAST) -- 5 Advanced Database Searching -- 6 Multiple Sequence Alignment -- 7 Molecular Phylogeny and Evolution -- Part II Genomewide Analysis of DNA, RNA, and Protein -- 8 DNA: The Eukaryotic Chromosome -- 9 Analysis of Next-Generation Sequence Data -- 10 Bioinformatic Approaches to Ribonucleic Acid (RNA) -- 11 Gene Expression: Microarray and RNA-seq Data Analysis -- 12 Protein Analysis and Proteomics -- 13 Protein Structure -- 14 Functional Genomics -- Part III Genome Analysis -- 15 Genomes Across the Tree of Life -- 16 Completed Genomes: Viruses -- 17 Completed Genomes: Bacteria and Archaea -- 18 Eukaryotic Genomes: Fungi -- 19 Eukaryotic Genomes: From Parasites to Primates -- 20 Human Genome -- 21 Human Disease -- Glossary -- Self-Test Quiz: Solutions -- Author Index -- Subject Index -- Wiley End User License Agreement.
Sommario/riassunto	The bestselling introduction to bioinformatics and genomics - now in its third edition Widely received in its previous editions, Bioinformatics

and Functional Genomics offers the most broad-based introduction to this explosive new discipline. Now in a thoroughly updated and expanded third edition, it continues to be the go-to source for students and professionals involved in biomedical research. This book provides up-to-the-minute coverage of the fields of bioinformatics and genomics. Features new to this edition include: Extensive revisions and a slight reorder of chapters for a more effective organization A brand new chapter on next-generation sequencing An expanded companion website, also updated as and when new information becomes available Greater emphasis on a computational approach, with clear guidance of how software tools work and introductions to the use of command-line tools such as software for next-generation sequence analysis, the R programming language, and NCBI search utilities The book is complemented by lavish illustrations and more than 500 figures and tables - many newly-created for the third edition to enhance clarity and understanding. Each chapter includes learning objectives, a problem set, pitfalls section, boxes explaining key techniques and mathematics/statistics principles, a summary, recommended reading, and a list of freely available software. Readers may visit a related Web page for supplemental information such as PowerPoints and audiovisual files of lectures, and videocasts of how to perform many basic operations: www.wiley.com/go/pevsnerbioinformatics. Bioinformatics and Functional Genomics, Third Edition serves as an excellent single-source textbook for advanced undergraduate and beginning graduate-level courses in the biological sciences and computer sciences. It is also an indispensable resource for biologists in a broad variety of disciplines who use the tools of bioinformatics and genomics to study particular research problems; bioinformaticists and computer scientists who develop computer algorithms and databases; and medical researchers and clinicians who want to understand the genomic basis of viral, bacterial, parasitic, or other diseases.
