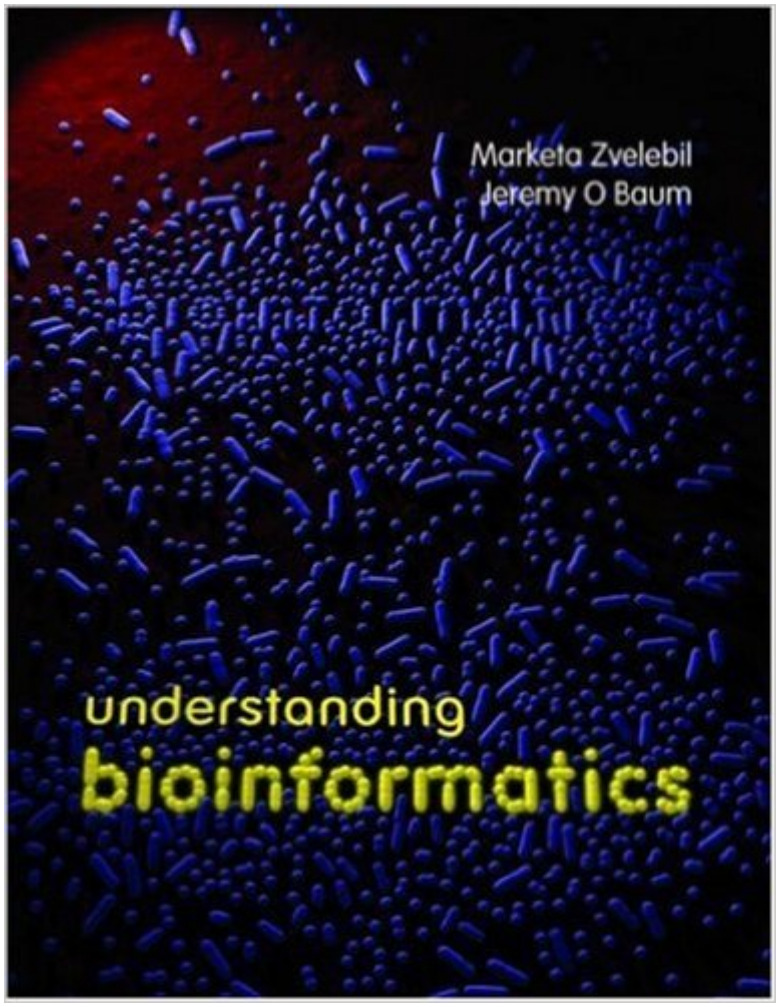
Understanding Bioinformatics



Synopsis

Suitable for advanced undergraduates and postgraduates, Understanding Bioinformatics provides a definitive guide to this vibrant and evolving discipline. The book takes a conceptual approach.Â It guides the reader from first principles through to an understanding of the computational techniques and the key algorithms.Â Understanding Bioinformatics is an invaluable companion for students from their first encounter with the subject through to more advanced studies.Â The book is divided into seven parts, with the openingÂ part introducing the basics of nucleic acids, proteins and databases.Â Subsequent parts are divided into 'Applications' and 'Theory' Chapters, allowing readers to focus their attention effectively.Â In each section, the Applications Chapter provides a fast and straightforward route to understanding the main concepts and 'getting started'. Each of these is then followed by Theory Chapters which give greater detail and present the underlying mathematics. In Part 2, Sequence Alignments, the Applications Chapter shows the reader how to get started on producing and analyzing sequence alignments, and using sequences for database searching, while the next two chapters look closely at the more advanced techniques and the mathematical algorithms involved.Â Part 3Â covers evolutionary processes and shows how bioinformatics can be used to help build phylogenetic trees.Â Part 4Â looks at the characteristics of whole genomes. InÂ Parts 5Â andÂ 6Â the focus turns to secondary and tertiary structure â " predicting structural conformation and analysing structure-function relationships.Â The lastÂ part surveys methods of analyzing data from a set of genes or proteins of an organism and is rounded off with an overview of systems biology. The writing style of Understanding Bioinformatics is notable for its clarity, while the extensive, full-color artwork has been designed to present the key concepts with simplicity and consistency.Â Each chapter uses mind-maps and flow diagrams to give an overview of the conceptual links within each topic.Â

Book Information

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Customer Reviews

This review was originally published in SciTech Lawyer, an American Bar Association Publication, in February 2008.Understanding Bioinformaticswritten by Marketa Zvelebil and Jeremy O. Baumpublished by Garland Science, 2008ISBN 0-8153-4024-9 (10 digit) or 978-0-8153-4024-9 (13 digit)When I volunteered to write a book review in the field of bioinformatics, I couldn't exactly shop at the local bookstore. Being both intimidated and in a big hurry, I scanned 's choices and I chose the one that sounded easiest: Understanding Bioinformatics, a recent paperback written by Marketa Zvelebil and Jeremy O. Baum. The title reminded me of Essentials of Molecular Biology by David Freifelder, the 1985 condensation with pretty pictures for budding biotech patent attorneys whose college papers were typed on an actual typewriter. However, shopping online and taking the easy route is risky; too many karmic variables. It turns out that the book weighs about four pounds; and even though it has plenty of pictures, it also has plenty of calculus.Even so, for those of you who are fairly up-to-date on this subject, you will find this book comprehensive and current. It is loaded with information, and seems to cater to someone who would sit down at a computer with the book on the edge of her desk, picking through for pointers. Anyone who masters this text can, without cracking even a small smile, consider himself an expert on the subject.Understanding Bioinformatics is, however, written for a variety of audiences, with each chapter formatted such that a reader can choose how technical to get. For right-brainers, the prose is easy to read and the graphics are great for memory retention.

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