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Titolo	When life is linear : from computer graphics to bracketology // Tim Chartier [[electronic resource]]
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Collana	Anneli Lax New Mathematical Library ; ; 45
Altri autori (Persone)	NelsenRoger B
Disciplina	502.855262
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Number 1?"; "12.1 Getting Massey"; "12.2 Colley Method"; "12.3 Rating Madness"; "12.4 March MATHness"; "12.5 Adding Weight to the Madness"; "12.6 World Cup Rankings"; "13 End of the Line"; "Bibliography"; "Index"

Sommario/riassunto

"Tim Chartier has written the perfect supplement to a linear algebra course. Every major topic is driven by applications, such as computer graphics, cryptography, webpage ranking, sports ranking and data mining. Anyone reading this book will have a clear understanding of the power and scope of linear algebra." Arthur Benjamin, Harvey Mudd College "Not only is it true that "Life Is Linear," as Tim Chartier asserts, but through his engaging style and modern, enticing applications he brings linear algebra to life. This small volume will be a popular read by math fans of all ages and of all backgrounds. Finally we have a little book that focuses on the utility and power of the theorems of linear algebra and makes that exploration joyful." Edward B. Burger, President and Professor, Southwestern University "I'm often asked which areas of mathematics should students study. I always say linear algebra. However, typical linear algebra texts I've seen either have very few applications, or the applications are contrived and not very relevant to students. Chartier's text is a refreshing change as it is driven by real-world applications that are inspiring and familiar to his audience. From Google searches and image processing to sports rankings and (my favorite) computer graphics." Tony DeRose, Pixar Animation Studios From simulating complex phenomenon on supercomputers to storing the coordinates needed in modern 3D printing, data is a huge and growing part of our world. A major tool to manipulate and study this data is linear algebra. When Life is Linear introduces concepts of matrix algebra with an emphasis on application, particularly in the fields of computer graphics and data mining. Readers will learn to make an image transparent, compress an image and rotate a 3D wireframe model. In data mining, readers will use linear algebra to read zip codes on envelopes and encrypt sensitive information. Chartier details methods behind web search, utilized by such companies as Google, and algorithms for sports ranking which have been applied to creating brackets for March Madness and predict outcomes in FIFA World Cup soccer. The book can serve as its own resource or to supplement a course on linear algebra.

2. Record Nr.	UNINA9910629285803321
Titolo	DNA Methyltransferases - Role and Function // edited by Albert Jeltsch, Renata Z. Jurkowska
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2022
ISBN	3-031-11454-X
Edizione	[2nd ed. 2022.]
Descrizione fisica	1 online resource (562 pages)
Collana	Advances in Experimental Medicine and Biology, , 2214-8019 ; ; 1389
Disciplina	572.86 572.792
Soggetti	Cytology Epigenetics Medical genetics Enzymology Cell Biology Medical Genetics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Chapter 1. Mechanisms and biological roles of DNA methyltransferases and DNA methylation – from past achievements to future challenges -- Chapter 2. Bacterial DNA Methylation and Methylomes -- Chapter 3. Chapter Domain Structure of the Dnmt1, Dnmt3a, and Dnmt3b DNA Methyltransferases -- Chapter 4. Enzymology of Mammalian DNA Methyltransferases -- Chapter 5. Genetic Studies on Mammalian DNA Methyltransferase -- Chapter 6. Structure and Mechanism of Plant DNA Methyltransferases -- Chapter 7. DNA Methylation in Honey Bees and the Unresolved Questions in Insect Methylomics -- Chapter 8. N6-Methyladenine: A Conserved and Dynamic DNA Mark -- Chapter 9. Pathways of DNA Demethylation -- Chapter 10. Structure and Function of TET Enzymes -- Chapter 11. Proteins That Read DNA Methylation -- Chapter 12. Recent advances on DNA base flipping – a general mechanism for writing, reading, and erasing DNA modifications.- Chapter 13. The Role of DNA Methylation in Cancer -- Chapter 14. DNMTs and DNA damage -- Chapter 15. Role of DNMTs in brain --

Chapter 16. Current and Emerging Technologies for the Analysis of the Genome-Wide and Locus-Specific DNA Methylation Patterns. -Chapter 17. Inhibitors of DNA methylation -- Chapter 18. Rewriting DNA Methylation Signatures at Will: The Curable Genome Within Reach? -- Chapter 19. DNA Labeling Using DNA Methyltransferases.

Sommario/riassunto

This 2nd edition of the book on DNA methyltransferases has been comprehensively updated to reflect many novel research findings regarding the structure, function, and technology of these enzymes that have emerged over the past 6 years. As the previous edition, this 2nd edition explains the biochemical properties of DNA methyltransferases, describing their structures, mechanisms and biological roles in bacteria, humans and plants. It also discusses the biological processes of reading DNA methylation and the mechanisms of DNA demethylation. This volume highlights the newest findings on DNA methyltransferase inhibitors and their use in cancer therapy as well as the latest epigenome editing systems based on these enzymes. Overall, this 2nd edition comprehensively summarizes the current state of research in the field of DNA methylation and DNA methyltransferase and is essential reading for early career and advanced researchers in this exciting field.
