

1. Record Nr.	UNINA9910807302303321
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Titolo	When life is linear : from computer graphics to bracketology // Tim Chartier [[electronic resource]]
Pubbl/distr/stampa	Washington : , : Mathematical Association of America, , 2015
ISBN	0-88385-988-2 1-61444-616-4
Descrizione fisica	1 online resource (ix, 136 pages) : digital, PDF file(s)
Collana	Anneli Lax New Mathematical Library ; ; 45
Altri autori (Persone)	NelsenRoger B
Disciplina	502.855262
Soggetti	Mathematics - Computer programs Textbooks.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Title from publisher's bibliographic system (viewed on 10 Dec 2015).
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	""Cover""; ""Half title""; ""Copyright""; ""Title""; ""Dedication""; ""Series""; ""Contents""; ""Preface""; ""Acknowledgments""; ""1 X Marks the Spot""; ""2 Entering the Matrix""; ""2.1 Sub Swapping""; ""2.2 Spying on the Matrix""; ""2.3 Math in the Matrix""; ""3 Sum Matrices""; ""3.1 Adding to Things""; ""3.2 Getting Inverted""; ""3.3 Blending Space""; ""3.4 Linearly Invisible""; ""3.5 Leaving Through a Portal""; ""4 Fitting the Norm""; ""4.1 Recommended Movie""; ""4.2 Handwriting at a Distance""; ""5 Go Forth and Multiply""; ""5.1 Scaly by Product""; ""5.2 Computing Similar Taste""; ""5.3 Scaling to Higher Dimensions""; ""5.4 Escher in the Matrix""; ""5.5 Lamborghini Spinout""; ""5.6 Line Detector""; ""6 It's Elementary, My Dear Watson""; ""6.1 Visual Operation""; ""6.2 Being Cryptic""; ""7 Math to the Max""; ""7.1 Dash of Math""; ""7.2 Linear Path to College""; ""7.3 Going Cocoa for Math""; ""8 Stretch and Shrink""; ""8.1 Getting Some Definition""; ""8.2 Getting Graphic""; ""8.3 Finding Groupies""; ""8.4 Seeing the Principal""; ""9 Zombie Math Decomposing""; ""9.1 A Singularly Valuable Matrix Decomposition""; ""9.2 Feeling Compressed""; ""9.3 In a Blur""; ""9.4 Losing Some Memory""; ""10 What Are the Chances?""; ""10.1 Down the Chute""; ""10.2 Google's Rankings of Web Pages""; ""10.3 Enjoying the Chaos""; ""11 Mining for Meaning""; ""11.1 Slice and Dice""; ""11.2 Movie with not Much Dimension""; ""11.3 Presidential Library of Eigenfaces""; ""11.4 Recommendation Seeing Stars""; ""12 Who's

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.
