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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.