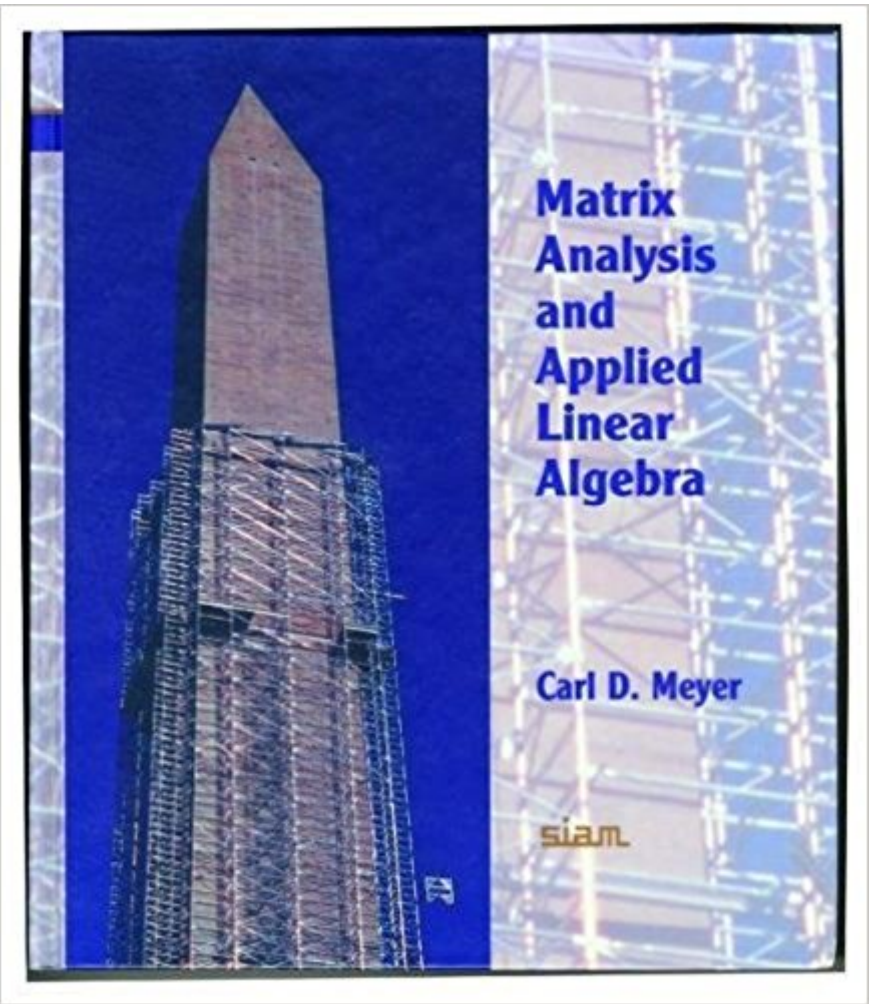
# Matrix Analysis And Applied Linear Algebra



## Synopsis

This book avoids the traditional definition-theorem-proof format; instead a fresh approach introduces a variety of problems and examples all in a clear and informal style. The in-depth focus on applications separates this book from others, and helps students to see how linear algebra can be applied to real-life situations. Some of the more contemporary topics of applied linear algebra are included here which are not normally found in undergraduate textbooks. Theoretical developments are always accompanied with detailed examples, and each section ends with a number of exercises from which students can gain further insight. Moreover, the inclusion of historical information provides personal insights into the mathematicians who developed this subject. The textbook contains numerous examples and exercises, historical notes, and comments on numerical performance and the possible pitfalls of algorithms. Solutions to all of the exercises are provided, as well as a CD-ROM containing a searchable copy of the textbook.

## Book Information

Textbook Binding: 700 pages

Publisher: SIAM: Society for Industrial and Applied Mathematics; Har/Cdr edition (February 15, 2001)

Language: English

ISBN-10: 0898714540

ISBN-13: 978-0898714548

Product Dimensions: 6 x 2 x 9 inches

Shipping Weight: 4.6 pounds (View shipping rates and policies)

Average Customer Review: 4.5 out of 5 stars 41 customer reviews

Best Sellers Rank: #52,378 in Books (See Top 100 in Books) #37 inÃ Â Books > Science & Math > Mathematics > Pure Mathematics > Algebra > Linear #295 inÃ Â Books > Textbooks > Science & Mathematics > Mathematics > Algebra & Trigonometry

## Customer Reviews

’I have taught courses using Meyer’s text for two semesters now and I like the book even better than when I first read it. The text is just what I want for an advanced level course in Linear Algebra for applied mathematicians and engineers. I plan to use it again.’ William C. Brown, Michigan State University’Meyer extensively treats traditional topics in matrix analysis and linear algebra. The text is well written, with the exact statements of important definitions and theorems set off in gray boxes, surrounded by proofs, motivational discussions, many examples and historical notes, and 749

exercises. Meyer intentionally leaves the 'scaffolding' in place to help the reader understand the development of the subject ... Included are a separate solutions manual and a CD-ROM containing the entire text and solution manual in a searchable, hyperlinked (cross-referenced) pdf format. This CD-ROM, one of the few with this feature, makes the package of even greater reference value.' J. D. Fehribach, CHOICE'Carl Meyer's book is an outstanding addition to the vast literature in this area. Its most distinctive feature is a seamless integration of the theoretical, computational, and applied aspects of the subject, which stems from the author's extensive experience in both teaching and research. The author's clear and elegant expository style is enlivened by a generous sprinkling of historical notes and aptly chosen quotations from famous mathematicians, making this book a delight to read. If this textbook will not succeed in awakening your students' interest in matrices and their uses, nothing else will.' Michele Benzi, Emory University'I like how well thought out and organized this book is. I would recommend that anyone who teaches a course in linear algebra consider this text. Those who choose not to adopt this text would still find it a handy reference a good reminder of some of the practical issues of linear algebra that working scientists must consider. In my opinion, the stronger the students in the course, and the longer they are exposed to the text (it would be best in a two semester sequence) the better they will appreciate this book and its spiral development of ideas.' Joel Foisy, MAA Online'I liked Meyer's book a lot. There are so many little tidbits in it that every student should know.' William C. Brown, Michigan State University'I'm impressed with the content and especially the CD. This is the first text I've seen that uses a CD like this. The cross-referencing (hyperlinking) is quite useful.' Ronald F. Taylor, Wright State University.'I recently returned to school for my graduate studies after a long absence. I have several linear algebra texts/references, but Matrix Analysis and Applied Linear Algebra from SIAM will surely be the one I use the most. It is easy to read, with excellent examples and strong applications. I really need a strong review! ' Eileen Daly, graduate student, University of Colorado at Boulder'This book combines the best of what you look for in a reference and a textbook. It is comprehensive and detailed but with so many great problems and examples that it is guaranteed to excite the undergraduate reader. I enjoyed the book throughout, but found the treatment of the FFT to be particularly original and effective.' Charles Van Loan, Cornell University.'The book covers an impressive range of material. It contains a number of topics not found in similar books. Professor Meyer takes great care in explaining abstract concepts.' Ilse Ipsen, North Carolina State University."...In studying for the final exam, I was able to solidify much of what we'd gone over during the semester by reading over the text and doing the problems. However, this time through, I gained a lot more respect for the textbook. I didn't notice at the time, but the way the earlier

problems foreshadowed techniques yet to come really helped me get everything to click into place. I am sincerely impressed with how much I learned." Gregory Nusz, Caldwell Scholar, North Carolina State University."I will say that I really enjoy the prose. It is a rare combination when the enthusiasm shines through, focused by erudition." Cleve Ashcraft, Livermore Software Technology Corporation."I like the book: the theory is sound, numerical performance and possible pitfalls of the algorithms are well discussed, and it contains interesting historical remarks." Walter Gander, Chairman, Computer Science Department, ETH Zurich.

The fresh approach of this book introduces a variety of problems with clarity and informality. The focus on applications demonstrates how linear algebra can be applied to real-life situations. Numerous examples, exercises and historical notes are provided, along with a CD-ROM containing a searchable copy of the textbook and solutions.

This is a "solid" matrix theory book for engineers or scientists. The reason that I gave it 4 stars is because I feel like it sometimes to fails to live up to the claim of being as casual it claims. For instance the idea of a projector matrix onto a subspace of an operator is very abstractly described but then is not backed up with what I would like to see in examples. So in my opinion, the book sometimes is too abstract without clear explanation. However, overall, this is a very good text that will take you far in the application of linear algebra in a wide variety of problems.

Really nice text on applied linear algebra. There are many examples that involve physical phenomena and interesting applications. However, it also provides the theoretical details necessary to really understand matrix computations at a deeper level. Proofs are provided throughout and there are numerous problems (proofs and applications) that go along with each topic. Even slightly more obscure or advanced topics are covered in addition to the standard material. One nice feature is the historical information provided in footnotes throughout the book, which make the motivation for certain topics more obvious.One disappointing feature: operation counts for numerical computations are included throughout, however they usually stand alone, with no algorithm given in the presentation. This is a little annoying since you would have to come up with the algorithm on your own to understand why the operation counts are what they are. However, since the focus is not on numerical computation, this still serves to motivate the use of one algorithm over another in practical applications.Overall, this is a detailed book with nice explanations. It could be used for lower-level undergraduate students, but is probably better for advanced undergrads or grad

students who haven’t taken much linear algebra. It is similar to Strang’s book but deeper in coverage.

A very thorough treatment of the subject with good explanations and lots of exercises.

This book provides many good chapters with excellent, clear, explanations and numerously well-constructed examples. It can be used as a text for a basic introductory level student as well as a book serving those who need to learn advanced topics in modern matrix/linear algebra. The student is introduced to the discipline with the usual gaussian elimination techniques as well as basic subspaces but is quickly lead to linear transformation, norms, inner products, orthogonal projections and eigenvaules and eigenvectors. As with many books, the chapters lead to the study of Jordan Form. This is where this book excels over many others because of its detailed explanations and examples in the preceding chapters.My own experience of trying to understand the Jordan Form has lead me in search for numerous other books on: invariant subspaces, complimentary subspaces, nilpotent matrices, range-null decomposition and projection operators. The foundation on successfully understanding the Jordan Form is a good understanding of these preceding subjects. Other books either skimp over the basic details of these abstract subjects (books that are too advanced) or failed to link them in a way that culminate in a coherent proof of the Jordan Form. This book handles this difficult proof in a clear logically manner, even with illustrations, because of the way these preceding abstract subjects are introduced to the student.Although this book is mainly theoretical in nature, it does provide numerous examples on application of the discipline. The book comes with a separate booklet for the answers. Gilbert Strang’s book is excellently suited for those who are completely new to the subject, this book is excellently suited to those who seek a little bit more.

This book contains a comprehensive treatment on the topic of matrix analysis and applied linear algebra. The concepts are clearly introduced and developed. It is rich with detailed proofs that are easy to follow. Results are summarized and clearly grouped and marked for reference. As a researcher and a practitioner, I found this book quite useful in explaining mathematical concepts without the need for a classroom instructor.Besides, this book comes with a CD that contains a PDF version which makes it quite useful to port as a reference. It is very rich with problem sets that add insight, both theoretically and practically. It is accompanied by a solutions manual which strengthens comprehension.I highly recommend this book. I think it deserves to be a model to follow for

authorship in the digital age.

This is a good overall book that goes beyond your basic linear algebra texts such as Leon. If you’re on the fence about buying it, just google Carl Meyer. His website has a digital copy of the text, so you can check it out and decide if it’s worth buying. I commend the author for making the digital copies available, which is uncommon for an author to do. So if you find the text useful, please buy it!Oh, by the way, the textbook includes a cd with searchable pdf copies of the book and solutions manual. That alone sets this text apart from most others.

The book said "like-new" and it was exactly like that, so accurate description.

I’m an EE Control Systems student in my senior year. I’ve already had basic classes in linear algebra and have used LA for for many other courses.I highly recommend BUYING the book as opposed to just downloading the PDF. There are great margins to write in for notes.This book will help you later in the workplace. I plan on having it on my shelf until death.Pros:+Clear+Examples+Proper mathematical characters are represented and not substituted+Their business modelCons:+Black an white



Matrix analysis and applied linear algebra Matrix Methods, Third Edition: Applied Linear Algebra Linear Algebra and Its Applications plus New MyMathLab with Pearson eText -- Access Card Package (5th Edition) (Featured Titles for Linear Algebra (Introductory)) Linear Algebra with Applications (9th Edition) (Featured Titles for Linear Algebra (Introductory)) Coding the Matrix: Linear Algebra through Applications to Computer Science Coding the Matrix: Linear Algebra through Computer Science Applications Linear Algebra With Applications (Jones and Bartlett Publishers Series in Mathematics. Linear) Applied Linear Algebra Applied Linear Algebra (3rd Edition) Matrix Computations and Semiseparable Matrices: Linear Systems (Volume 1) Applied Regression Analysis and Generalized Linear Models Linear and Complex Analysis for Applications (Advances in Applied Mathematics) Matrix Algebra Useful for Statistics (Wiley Series in Probability and Statistics) Matrix Algebra: Theory, Computations, and Applications in Statistics (Springer Texts in Statistics) Introduction to Modern Algebra and Matrix Theory: Second Edition (Dover Books on Mathematics) Hands-On Matrix Algebra Using R: Active and Motivated Learning with Applications Matrix Algebra: Exercises and Solutions Matrix Algebra (Springer Texts in Statistics) Matrix Algebra & Its Applications to Statistics & Econometrics Applied Functional Analysis: Main Principles and

Their Applications (Applied Mathematical Sciences)