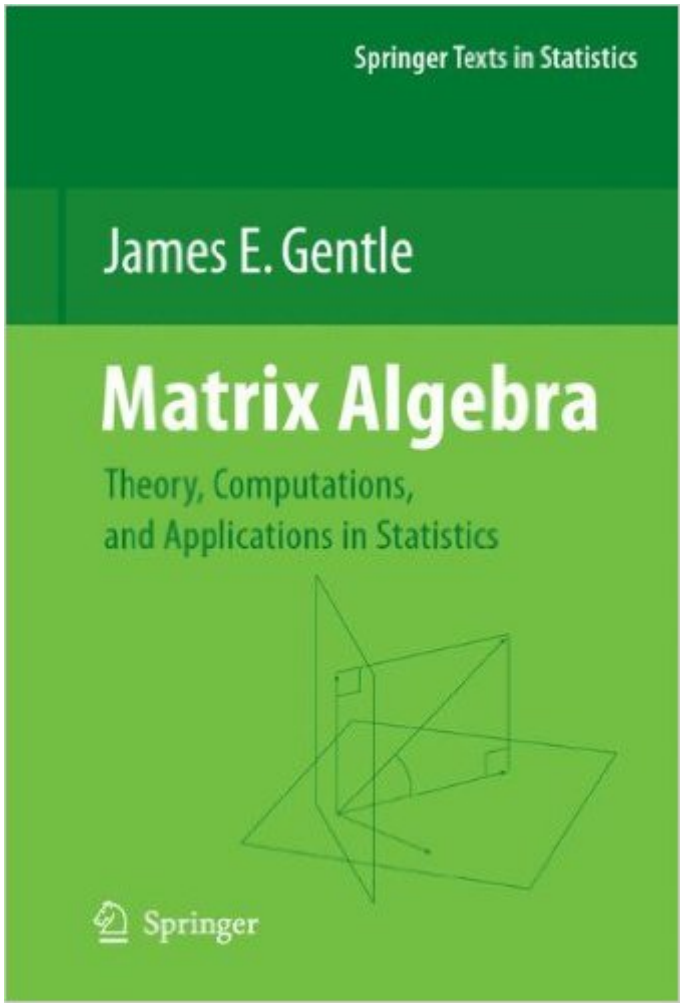
Matrix Algebra: Theory, Computations, And Applications In Statistics (Springer Texts In Statistics)



Synopsis

This much-needed work presents, among other things, the relevant aspects of the theory of matrix algebra for applications in statistics. Written in an informal style, it addresses computational issues and places more emphasis on applications than existing texts.

Book Information

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Customer Reviews

I am not a real mathematician or hard core numeric analyst; my formal training is lacking, and maybe that's why I don't gravitate to Dennis Bernstein's text or others like it. I have managed to get past the very basics (rank, determinants, permanents, spectral decomposition, Jordon normal form) and come to appreciate the numeric issues involved in computing (or, more to the point, avoiding the computation of) inverses and pseudoinverses. The theory is less interesting to me than, or at least is primarily in service of, the applications. James Gentle's treatment of how numeric computing is actually done serves as useful context which I found missing in some more theoretical texts, and glossed over by some introductory texts. I guess that's why I keep coming back to it. It serves my personal needs. I find it surprisingly readable; diagrams are used as needed, and its index is good.Perhaps I am simply in a sort of limbo, where this intermediate (?) linear algebra text is something I might eventually outgrow. (When that might happen, I'm sure I don't know) Experienced numeric analysts seem to prefer treatments like Bernstein, Horn, or Golub & Van Loan, while the SIAM text by Meyer or the classic textbooks by Strang are probably better introductions. This book

is clearly slanted towards statisticians, and more than that, statisticians who find themselves operating on large datasets, perhaps without a rigorous math background. It was invaluable to me when I had to implement my own GLM engine (for reasons too boring to discuss here, I couldn't use GPLed software). You don't really need it to peck at R, for example, but if you go to scale up a piece of code in C++ or similar, it will be much more difficult if you haven't digested this material.