Numerical Linear Algebra and Applications
SECOND EDITION
Biswa Nath Datta

This second edition of the author’s acclaimed textbook covers the major topics of computational linear algebra, including solution of a system of linear equations, least-squares solutions of linear systems, computation of eigenvalues, eigenvectors, and singular value problems.

Important features of the original edition have been updated and improved:

- The author covers a variety of motivating applications drawn from numerous disciplines of science and engineering. When a physical problem is posed, the scientific and engineering significance of the solution is clearly stated.
- Each chapter contains a summary of the important concepts developed in that chapter, suggestions for further reading, and numerous exercises, both theoretical and MATLAB® and MATCOM based. The author also provides a list of key words for quick reference.
- The MATLAB toolkit MATCOM contains implementations of the major algorithms associated with the book and enables students to study different algorithms for the same problem, comparing efficiency, stability, and accuracy.
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- Online content includes appendices containing MATLAB codes and the MATCOM toolkit solutions to selected problems plus an extra chapter on special topics.

Audience — This book is intended for undergraduate and graduate students in applied and computational mathematics, scientific computing, computer science, financial mathematics, actuarial sciences, and electrical and mechanical engineering. It will also appeal to researchers in mathematics, computer science, physics, chemistry, biology, economics, statistics, and aerospace, electrical, mechanical, and chemical engineering as well as practicing engineers and industrial mathematicians.

About the Author — Biswa Nath Datta is Professor of Mathematical Sciences, Adjunct Professor of Electrical and Mechanical Engineering, and Distinguished Research Professor at Northern Illinois University. He has authored more than 115 interdisciplinary research papers, two books, and several associated software packages. He has also served on the editorial boards of more than a dozen mathematics and engineering journals.

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