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*Peter Deuffhard
Andreas Hohmann*

TEXTS IN APPLIED MATHEMATICS

**Numerical Analysis in
Modern Scientific
Computing**
An Introduction

Second Edition



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Numerical Analysis In Modern Scientific Computing An Introduction

Jeffery J. Leader



Numerical Analysis In Modern Scientific Computing An Introduction:

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Mark H. Holmes, 2023-07-11 This textbook provides an introduction to numerical computing and its applications in science and engineering The topics covered include those usually found in an introductory course as well as those that arise in data analysis This includes optimization and regression based methods using a singular value decomposition The emphasis is on problem solving and there are numerous exercises throughout the text concerning applications in engineering and science The essential role of the mathematical theory

underlying the methods is also considered both for understanding how the method works as well as how the error in the computation depends on the method being used The codes used for most of the computational examples in the text are available on GitHub This new edition includes material necessary for an upper division course in computational linear algebra

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Numerical Methods in Scientific Computing Germund Dahlquist, Ake Björck, 2008-01-01 This new book from the authors of the classic book Numerical methods addresses the increasingly important role of numerical methods in science and engineering More cohesive and comprehensive than any other modern textbook in the field it combines traditional and well developed topics with other material that is rarely found in numerical analysis texts such as interval arithmetic elementary functions operator

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