Numerical Methods And Optimization By Ric Walter

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Dissertation Abstracts International - 1970

Numerical Methods for Large Eigenvalue Problems - Yousef Saad 2011-05-26
This revised edition discusses numerical methods for computing the eigenvalues and eigenvectors of large sparse matrices. It provides an in-depth view of the numerical methods that are applicable for solving matrix eigenvalue problems that arise in various engineering and scientific applications. Each chapter was updated by shortening or deleting outdated topics, adding topics of more recent interest and adapting the Notes and References section. Significant changes have been made to Chapters 6 through 8, which describe algorithms and their implementations and now include topics such as the implicit restart techniques, the Jacobi-Davidson method and automatic multilevel substructuring.
Scientific and Technical Aerospace Reports - 1991

Numerical Methods and Optimization in Finance - Manfred Gilli 2011-07-11
This book describes computational finance tools. It covers fundamental numerical analysis and computational techniques, such as option pricing, and gives special attention to simulation and optimization. Many chapters are organized as case studies around portfolio insurance and risk estimation problems. In particular, several chapters explain optimization heuristics and how to use them for portfolio selection and in calibration of estimation and option pricing models. Such practical examples allow readers to learn the steps for solving specific problems and apply these steps to others. At the same time, the applications are relevant enough to make the book a useful reference. Matlab and R sample code is provided in the text and can be downloaded from the book's website. Shows ways to build and implement tools that help test ideas Focuses on the application of heuristics; standard methods receive limited attention Presents as separate chapters problems from portfolio optimization, estimation of econometric models, and calibration of option pricing models
Publications of Los Alamos Research - Los Alamos National Laboratory 1983

American Book Publishing Record - 1997

Government Reports Announcements & Index - 1980-10

Numerical Control: Part B - Emmanuel Trélat 2023-02-20

Numerical Control: Part B, Volume 24 in the Handbook of Numerical Analysis series, highlights new advances in the field, with this new volume presenting interesting chapters written by an international board of authors. Chapters in this volume include Control problems in the coefficients and the domain for linear elliptic equations, Computational approaches for extremal geometric eigenvalue problems, Non-overlapping domain decomposition in space and time for PDE-constrained optimal control problems on networks, Feedback Control of Time-dependent Nonlinear PDEs with Applications in Fluid Dynamics, Stabilization of the Navier-Stokes equations - Theoretical and numerical aspects, Reconstruction algorithms based on Carleman estimates, and more. Other sections cover Discrete time formulations as time discretization strategies in data assimilation, Back and forth iterations/Time reversal methods, Unbalanced Optimal Transport: from Theory to Numerics, An ADMM Approach to the Exact and Approximate Controllability of Parabolic Equations, Nonlocal balance laws -- an overview over recent results, Numerics and control of conservation laws, Numerical approaches for simulation and control of superconducting quantum circuits, and much more. Provides the authority and expertise of leading contributors from an international board of authors Presents the latest release in the Handbook of Numerical Analysis series Updated release includes the latest information on Numerical Control

Who's Who in Technology - Amy L. Unterburger 1989

Grants and Awards for the Fiscal Year Ended ... - National Science Foundation (U.S.) 1981

Fiscal year 1985 Department of Energy authorization - United States. Congress. House. Committee on Science and Technology. Subcommittee on Energy Development and Applications 1984

Numerical Analysis and Scientific Computation - Jeffery J. Leader 2022-04-08

This is an introductory single-term numerical analysis text with a modern scientific computing flavor. It offers an immediate immersion in numerical methods featuring an up-to-date approach to computational matrix algebra and an emphasis on methods used in actual software packages, always highlighting how hardware concerns can impact the choice of algorithm. It fills the need for a text that is mathematical enough for a numerical analysis course yet applied enough for students of science and engineering taking it with practical need in mind. The standard methods of numerical analysis are rigorously derived with results stated carefully and many proven. But while this is the focus, topics such as parallel implementations, the Basic Linear Algebra Subroutines, halfto quadruple-precision computing, and other practical matters are frequently discussed as well. Prior computing experience is not assumed. Optional MATLAB subsections for each section provide a comprehensive self-taught tutorial and also allow students to engage in numerical experiments with the methods they have just read about. The text may also be used with other computing environments. This new edition offers a complete and thorough update. Parallel approaches, emerging hardware capabilities, computational modeling, and data science are given greater weight.

Numerical Linear Algebra and Optimization - Philip E. Gill 2021-05-13

This classic volume covers the fundamentals of two closely related topics: linear systems (linear equations and least-squares) and linear programming (optimizing a linear function subject to linear constraints). For each problem class, stable and efficient numerical algorithms intended for a finite-precision

environment are derived and analyzed. While linear algebra and optimization have made huge advances since this book first appeared in 1991, the fundamental principles have not changed. These topics were rarely taught with a unified perspective, and, somewhat surprisingly, this remains true 30 years later. As a result, some of the material in this book can be difficult to find elsewhere—in particular, techniques for updating the LU factorization, descriptions of the simplex method applied to all-inequality form, and the analysis of what happens when using an approximate inverse to solve Ax=b. Numerical Linear Algebra and Optimization is primarily a reference for students who want to learn about numerical techniques for solving linear systems and/or linear programming using the simplex method; however, Chapters 6, 7, and 8 can be used as the text for an upper-division course on linear least squares and linear programming. Understanding is enhanced by numerous exercises.

Practical Optimization - Philip E. Gill 2019-12-16

In the intervening years since this book was published in 1981, the field of optimization has been exceptionally lively. This fertility has involved not only progress in theory, but also faster numerical algorithms and extensions into unexpected or previously unknown areas such as semidefinite programming. Despite these changes, many of the important principles and much of the intuition can be found in this Classics version of Practical Optimization. This book provides model algorithms and pseudocode, useful tools for users who prefer to write their own code as well as for those who want to understand externally provided code. It presents algorithms in a step-by-step format, revealing the overall structure of the underlying procedures and thereby allowing a high-level perspective on the fundamental differences. And it contains a wealth of techniques and strategies that are well suited for optimization in the twenty-first century, and particularly in the now-flourishing fields of data science, “big data,” and machine learning. Practical Optimization is appropriate for advanced undergraduates, graduate students, and researchers interested in methods for solving optimization problems.

Reviews in Numerical Analysis, 1980-86 - 1987

These five volumes bring together a wealth of bibliographic information in the area of numerical analysis. Containing over 17,600 reviews of articles, books, and conference proceedings, these volumes represent all the numerical analysis entries that appeared in Mathematical Reviews between 1980 and 1986. Author and key indexes appear at the end of volume 5.

Index of Patents Issued from the United States Patent and Trademark Office -

Scientific and Technical Books in Print - 1972

Dictionary of Mathematical Geosciences - Richard J. Howarth 2017-05-27

This dictionary includes a number of mathematical, statistical and computing terms and their definitions to assist geoscientists and provide guidance on the methods and terminology encountered in the literature. Each technical term used in the explanations can be found in the dictionary which also includes explanations of basics, such as trigonometric functions and logarithms. There are also citations from the relevant literature to show the term’s first use in mathematics, statistics, etc. and its subsequent usage in geosciences.

Research in Progress - 1982

Metaheuristics - Karl F. Doerner 2007-08-13

This book’s aim is to provide several different kinds of information: a delineation of general metaheuristics methods, a number of state-of-the-art articles from a variety of well-known classical application areas as well as an outlook to modern computational methods in promising new areas. Therefore, this book may equally serve as a textbook in graduate courses for students, as a

reference book for people interested in engineering or social sciences, and as a collection of new and promising avenues for researchers working in this field.

Risk Management - Sergio M. Focardi 1998-01-15

Risk management is one of the most critical areas in investment and finance-especially in today's volatile trading environment. With Risk Management: Framework, Methods, and Practice you'll learn about risk management across industries through firsthand, real life war stories rather than mathematical formulas. Concise and readable, it covers both the theoretical underpinnings of risk management, as well as practical techniques for coping with financial market volatility. Focardi and Jonas give you a broad conceptual view of risk management: how far we have progressed, and the problems that remain. Using vivid analogies, this book takes you through key risk measurement issues such as fat tails and extreme events, the pros and cons of VAR, and the different ways of modeling credit risk. This book is a rarity in that it does not presuppose any knowledge of sophisticated mathematical techniques, but rather interprets these in their intuitive sense.

Mathematical Reviews - 2005

SIAM Journal on Numerical Analysis - 1978

Numerical Methods for Computer Science, Engineering, and Mathematics - John H. Mathews 1987

Mesh Dependence in PDE-Constrained Optimisation - Tobias Schwedes 2017-07-07

This book provides an introduction to PDE-constrained optimisation using finite elements and the adjoint approach. The practical impact of the mathematical insights presented here are demonstrated using the realistic scenario of the optimal placement of marine power turbines, thereby illustrating the real-world relevance of best-practice Hilbert space aware approaches to PDE-constrained optimisation problems. Many optimisation problems that arise in a real-world context are constrained by partial differential equations (PDEs). That is, the system whose configuration is to be optimised follows physical laws given by PDEs. This book describes general Hilbert space formulations of optimisation algorithms, thereby facilitating optimisations whose controls are functions of space. It demonstrates the importance of methods that respect the Hilbert space structure of the problem by analysing the mathematical drawbacks of failing to do so. The approaches considered are illustrated using the optimisation problem arising in tidal array layouts mentioned above. This book will be useful to readers from engineering, computer science, mathematics and physics backgrounds interested in PDE-constrained optimisation and their real-world applications.

Comprehensive Dissertation Index - 1984

U.S. Government Research Reports - 1964

Generalized Concavity - Mordecai Avriel 2010-11-25

Originally published: New York: Plenum Press, 1988.

Attractive Ellipsoids in Robust Control - Alexander Poznyak 2014-09-29

This monograph introduces a newly developed robust-control design technique for a wide class of continuous-time dynamical systems called the “attractive ellipsoid method.” Along with a coherent introduction to the proposed control design and related topics, the monograph studies nonlinear affine control systems in the presence of uncertainty and presents a constructive and easily implementable control strategy that guarantees certain stability properties. The authors discuss linear-style feedback control synthesis in the context of the above-mentioned systems. The development and physical implementation of high-performance robust-feedback controllers that

work in the absence of complete information is addressed, with numerous examples to illustrate how to apply the attractive ellipsoid method to mechanical and electromechanical systems. While theorems are proved systematically, the emphasis is on understanding and applying the theory to real-world situations. Attractive Ellipsoids in Robust Control will appeal to undergraduate and graduate students with a background in modern systems theory as well as researchers in the fields of control engineering and applied mathematics.

Applied Mechanics Reviews - 1968

Elementary Numerical Analysis - S. D. Conte 2018-02-27

This book provides a thorough and careful introduction to the theory and practice of scientific computing at an elementary, yet rigorous, level, from theory via examples and algorithms to computer programs. The original FORTRAN programs have been rewritten in MATLAB and now appear in a new appendix and online, offering a modernized version of this classic reference for basic numerical algorithms.

American Doctoral Dissertations - 1997

The New Palgrave Dictionary of Economics - 2016-05-18

The award-winning The New Palgrave Dictionary of Economics, 2nd edition is now available as a dynamic online resource. Consisting of over 1,900 articles written by leading figures in the field including Nobel prize winners, this is the definitive scholarly reference work for a new generation of economists. Regularly updated! This product is a subscription based product.

Numerical Optimization 1984 - Paul T. Boggs 1985-01-01

Automatic Differentiation of Algorithms - George Corliss 2013-11-21

A survey book focusing on the key relationships and synergies between automatic differentiation (AD) tools and other software tools, such as compilers and parallelizers, as well as their applications. The key objective is to survey the field and present the recent developments. In doing so the topics covered shed light on a variety of perspectives. They reflect the mathematical aspects, such as the differentiation of iterative processes, and the analysis of nonsmooth code. They cover the scientific programming aspects, such as the use of adjoints in optimization and the propagation of rounding errors. They also cover "implementation" problems.

New Technical Books - New York Public Library 1974

Practical Methods for Optimal Control and Estimation Using Nonlinear Programming - John T. Betts 2010-01-01

A focused presentation of how sparse optimization methods can be used to solve optimal control and estimation problems.

Numerical Algorithms - Justin Solomon 2015-06-24

Numerical Algorithms: Methods for Computer Vision, Machine Learning, and Graphics presents a new approach to numerical analysis for modern computer scientists. Using examples from a broad base of computational tasks, including data processing, computational photography, and animation, the textbook introduces numerical modeling and algorithmic desig

Peterson's Graduate Programs in Engineering and Applied Sciences, 1996 - Peterson's Guides 1995-12-10

Graduate students depend on this series and ask for it by name. Why? For over 30 years, it's been the only one-stop source that supplies all of their information needs. The new editions of this six-volume set contain the most comprehensive information available on more than 1,500 colleges offering over 31,000 master's, doctoral, and professional-degree programs in more than 350 disciplines.New for 1997 -- Non-degree-granting research centers, institutes, and training programs that are part of a graduate degree

program.Five discipline-specific volumes detail entrance and program requirements, deadlines, costs, contacts, and special options, such as distance learning, for each program, if available. Each Guide features "The Graduate Adviser", which discusses entrance exams, financial aid, accreditation, and more.Interest in these fields has never been higher! And this is the source to the 3,400 programs currently available -- from bioengineering and computer science to construction management.

Catalog of Copyright Entries. Third Series

- Library of Congress. Copyright Office 1973