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MATHEMATICS FOR MACHINE LEARNING

Cambridge University Press Distills key concepts from linear algebra, geometry, matrices, calculus, optimization, probability and statistics that are used in machine learning.

ISSUES IN LOGIC, OPERATIONS, AND COMPUTATIONAL MATHEMATICS AND GEOMETRY: 2013 EDITION

ScholarlyEditions Issues in Logic, Operations, and Computational Mathematics and Geometry: 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Random Structures and Algorithms. The editors have built Issues in Logic, Operations, and Computational Mathematics and Geometry: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Random Structures and Algorithms in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Logic, Operations, and Computational Mathematics and Geometry: 2013 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

PARALLEL PROCESSING AND APPLIED MATHEMATICS

10TH INTERNATIONAL CONFERENCE, PPAM 2013, WARSAW, POLAND, SEPTEMBER 8-11, 2013, REVISED SELECTED PAPERS, PART II

Springer This two-volume-set (LNCS 8384 and 8385) constitutes the refereed proceedings of the 10th International Conference of Parallel Processing and Applied Mathematics, PPAM 2013, held in Warsaw, Poland, in September 2013. The 143 revised full papers presented in both volumes were carefully reviewed and selected from numerous submissions. The papers cover important fields of parallel/distributed/cloud computing and applied mathematics, such as numerical algorithms and parallel scientific computing; parallel non-numerical algorithms; tools and environments for parallel/distributed/cloud computing; applications of parallel computing; applied mathematics, evolutionary computing and metaheuristics.

APPLIED WAVE MATHEMATICS II

SELECTED TOPICS IN SOLIDS, FLUIDS, AND MATHEMATICAL METHODS AND COMPLEXITY

Springer Nature This book gathers contributions on various aspects of the theory and applications of linear and nonlinear waves and associated phenomena, as well as approaches developed in a global partnership of researchers with the national Centre of Excellence in Nonlinear Studies (CENS) at the Department of Cybernetics of Tallinn University of Technology in Estonia. The papers chiefly focus on the role of mathematics in the analysis of wave phenomena. They highlight the complexity of related topics concerning wave generation, propagation, transformation and impact in solids, gases, fluids and human tissues, while also sharing insights into selected mathematical methods for the analytical and numerical treatment of complex phenomena. In addition, the contributions derive advanced mathematical models, share innovative ideas on computing, and present novel applications for a number of research fields where both linear and nonlinear wave problems play an important role. The papers are written in a tutorial style, intended for non-specialist researchers and students. The authors first describe the basics of a problem that is currently of interest in the scientific community, discuss the state of the art in related research, and then share their own experiences in tackling the problem. Each chapter highlights the importance of applied mathematics for central issues in the study of waves and associated complex phenomena in different media. The topics range from basic principles of wave mechanics up to the mathematics of Planet Earth in the broadest sense, including contemporary challenges in the mathematics of society. In turn, the areas of application range from classic ocean wave mathematics to material science, and to human nerves and tissues. All contributions describe the approaches in a straightforward manner, making them ideal material for educational purposes, e.g. for courses, master class lectures, or seminar presentations.

ANALYTIC RESEARCH FOUNDATIONS FOR THE NEXT-GENERATION ELECTRIC GRID

National Academies Press Electricity is the lifeblood of modern society, and for the vast majority of people that electricity is obtained from large, interconnected power grids. However, the grid that was developed in the 20th century, and the incremental improvements made since then, including its underlying analytic foundations, is no longer adequate to completely meet the needs of the 21st century. The next-generation electric grid must be more flexible and resilient. While fossil fuels will have their place for decades to come, the grid of the future will need to accommodate a wider mix of more intermittent generating sources such as wind and distributed solar photovoltaics. Achieving this grid of the future will require effort on several fronts. There is a need for continued shorter-term engineering research and development, building on the existing analytic foundations for the grid. But there is also a need for more fundamental research to expand these analytic foundations. Analytic Research Foundations for the Next-Generation Electric Grid provide guidance on the longer-term critical areas for research in mathematical and computational sciences that is needed for the next-generation grid. It offers recommendations that are designed to help direct future research as the grid evolves and to give the nation's research and development infrastructure the tools it needs to effectively develop, test, and use this research.

HOW STUDENTS THINK WHEN DOING ALGEBRA

IAP Algebra is the gateway to college and careers, yet it functions as the eye of the needle because of low pass rates for the middle school/high school course and students' struggles to understand. We have forty years of research that discusses the ways students think and their cognitive challenges as they engage with algebra. This book is a response to the National Council of Teachers of Mathematics' (NCTM) call to better link research and practice by capturing what we have learned about students' algebraic thinking in a way that is usable by teachers as they prepare lessons or reflect on their experiences in the classroom. Through a Fund for the Improvement of Post-Secondary Education (FIPSE) grant, 17 teachers and mathematics educators read through the past 40 years of research on students' algebraic thinking to capture what might be useful information for teachers to know—over 1000 articles altogether. The resulting five domains addressed in the book (Variables & Expressions, Algebraic Relations, Analysis of Change, Patterns & Functions, and Modeling & Word Problems) are closely tied to CCSS topics. Over time, veteran math teachers develop extensive knowledge of how students engage with algebraic concepts—their misconceptions, ways of thinking, and when and how they are challenged to understand—and use that knowledge to anticipate students' struggles with particular lessons and plan accordingly. Veteran teachers learn to evaluate whether an incorrect response is a simple error or the symptom of a faulty or naïve understanding of a concept. Novice teachers, on the other hand, lack the experience to anticipate important moments in the learning of their students. They often struggle to make sense of what students say in the classroom and determine whether the response is useful or can further discussion (Leatham, Stockero, Peterson, & Van Zoest 2011; Peterson & Leatham, 2009). The purpose of this book is to accelerate early career teachers' "experience" with how students think when doing algebra in middle or high school as well as to supplement veteran teachers' knowledge of content and students. The research that this book is based upon can provide teachers with insight into the nature of a student's struggles with particular algebraic ideas—to help teachers identify patterns that imply underlying thinking. Our book, How Students Think When Doing Algebra, is not intended to be a "how to" book for teachers. Instead, it is intended to orient new teachers to the ways students think and be a book that teachers at all points in their career continually pull of the shelf when they wonder, "how might my students struggle with this algebraic concept I am about to teach?" The primary audience for this book is early career mathematics teachers who don't have extensive experience working with students engaged in mathematics. However, the book can also be useful to veteran teachers to supplement their knowledge and is an ideal resource for mathematics educators who are preparing preservice teachers.

STOCHASTIC MODELLING OF REACTION-DIFFUSION PROCESSES

Cambridge University Press Practical introduction for advanced undergraduate or beginning graduate students of applied mathematics, developed at the University of Oxford.

SYSTEM MODELING AND OPTIMIZATION

27TH IFIP TC 7 CONFERENCE, CSMO 2015, SOPHIA ANTIPOLIS, FRANCE, JUNE 29 - JULY 3, 2015, REVISED SELECTED PAPERS

Springer This book is a collection of thoroughly refereed papers presented at the 27th IFIP TC 7 Conference on System Modeling and Optimization, held in Sophia Antipolis, France, in June/July 2015. The 48 revised papers were carefully reviewed and selected from numerous submissions. They cover the latest progress in their respective areas and encompass broad aspects of system modeling and optimization, such as modeling and analysis of systems governed by Partial Differential Equations (PDEs) or Ordinary Differential Equations (ODEs), control of PDEs/ODEs, nonlinear optimization, stochastic optimization, multi-objective optimization, combinatorial optimization, industrial applications, and numericsof PDEs.

PERTURBATION METHODS IN CREDIT DERIVATIVES

STRATEGIES FOR EFFICIENT RISK MANAGEMENT

John Wiley & Sons Stress-test financial models and price credit instruments with confidence and efficiency using the perturbation approach taught in this expert volume *Perturbation Methods in Credit Derivatives: Strategies for Efficient Risk Management* offers an incisive examination of a new approach to pricing credit-contingent financial instruments. Author and experienced financial engineer Dr. Colin Turfus has created an approach that allows model validators to perform rapid benchmarking of risk and pricing models while making the most efficient use possible of computing resources. The book provides innumerable benefits to a wide range of quantitative financial experts attempting to comply with increasingly burdensome regulatory stress-testing requirements, including: Replacing time-consuming Monte Carlo simulations with faster, simpler pricing algorithms for front-office quants Allowing CVA quants to quantify the impact of counterparty risk, including wrong-way correlation risk, more efficiently Developing more efficient algorithms for generating stress scenarios for market risk quants Obtaining more intuitive analytic pricing formulae which offer a clearer intuition of the important relationships among market parameters, modelling assumptions and trade/portfolio characteristics for traders The methods comprehensively taught in *Perturbation Methods in Credit Derivatives* also apply to CVA/DVA calculations and contingent credit default swap pricing.

RECENT ADVANCES IN COMPUTATIONAL OPTIMIZATION

RESULTS OF THE WORKSHOP ON COMPUTATIONAL OPTIMIZATION WCO 2020

Springer Nature This book presents recent advances in computational optimization. Our everyday life is unthinkable without optimization. We try to minimize our effort and to maximize the achieved profit. Many real-world and industrial problems arising in engineering, economics, medicine and other domains can be formulated as optimization tasks. The book is a comprehensive collection of extended contributions from the Workshops on Computational Optimization 2020. The book includes important real problems like modeling of physical processes, workforce planning, parameter settings for controlling different processes, transportation problems, wireless sensor networks, machine scheduling, air pollution modeling, solving multiple integrals and systems of differential equations which describe real processes, solving engineering problems. It shows how to develop algorithms for them based on new intelligent methods like evolutionary computations, ant colony optimization, constrain programming and others. This research demonstrates how some real-world problems arising in engineering, economics and other domains can be formulated as optimization problems.

TEACHING AND LEARNING SECONDARY SCHOOL MATHEMATICS

CANADIAN PERSPECTIVES IN AN INTERNATIONAL CONTEXT

Springer This volume brings together recent research and commentary in secondary school mathematics from a breadth of contemporary Canadian and International researchers and educators. It is both representative of mathematics education generally, as well as unique to the particular geography and culture of Canada. The chapters address topics of broad applicability such as technology in learning mathematics, recent interest in social justice contexts in the learning of mathematics, as well as Indigenous education. The voices of classroom practitioners, the group ultimately responsible for implementing this new vision of mathematics teaching and learning, are not forgotten. Each section includes a chapter written by a classroom teacher, making this volume unique in its approach. We have much to learn from one another, and this volume takes the stance that the development of a united vision, supported by both research and professional dialog, provides the first step.

273 TECHNICAL QUESTIONS AND ANSWERS FOR JOB INTERVIEW OFFSHORE DRILLING RIGS

Petrogav International The job interview is probably the most important step you will take in your job search journey. Because it's always important to be prepared to respond effectively to the questions that employers typically ask at a job interview Petrogav International has prepared this eBooks that will help you to get a job in oil and gas industry. Since these questions are so common, hiring managers will expect you to be able to answer them smoothly and without hesitation. This eBook contains 273 questions and answers for job interview and as a BONUS 230 links to video movies. This course covers aspects like HSE, Process, Mechanical, Electrical and Instrumentation & Control that will enable you to apply for any position in the Oil and Gas Industry.

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200 TECHNICAL QUESTIONS AND ANSWERS FOR JOB INTERVIEW OFFSHORE OIL & GAS RIGS

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ENCYCLOPEDIA OF INFORMATION SCIENCE AND TECHNOLOGY, THIRD EDITION

IGI Global "This 10-volume compilation of authoritative, research-based articles contributed by thousands of researchers and experts from all over the world emphasized modern issues and the presentation of potential opportunities, prospective solutions, and future directions in the field of information science and technology"--Provided by publisher.

CAMBRIDGE IGCSE CORE MATHEMATICS PRACTICE BOOK

Cambridge University Press A series of titles written to cover the complete Cambridge IGCSE Mathematics (0580) syllabus and endorsed by Cambridge International Examinations.

ARTIFICIAL INTELLIGENCE AND SOFT COMPUTING

12TH INTERNATIONAL CONFERENCE, ICAISC 2013, ZAKOPANE, POLAND, JUNE 9-13, 2013, PROCEEDINGS, PART I

Springer The two-volume set LNAI 7894 and LNCS 7895 constitutes the refereed proceedings of the 12th International Conference on Artificial Intelligence and Soft Computing, ICAISC 2013, held in Zakopane, Poland in June 2013. The 112 revised full papers presented together with one invited paper were carefully reviewed and selected from 274 submissions. The 57 papers included in the first volume are organized in the following topical sections: neural networks and their applications; fuzzy systems and their applications; pattern classification; and computer vision, image and speech analysis.

MICHELL STRUCTURES

Springer The book covers the theory of Michell structures being the lightest and fully stressed systems of bars, designed within a given domain, possibly within the whole space, transmitting a given load towards a given support. Discovered already in 1904 by A.G.M. Michell, the structures named after him have attracted constant attention due to their peculiar feature of disclosing the optimal streams of stresses equilibrating a given load and thus determining the optimal layout of bars. The optimal layouts emerge from among all possible structural topologies, thus constituting unique designs being simultaneously light and stiff. The optimal structures turn out to be embedded in optimal vector fields covering the whole feasible domain. Key features include: a variationally consistent theory of bar systems, thin plates in bending and membrane shells; recapitulation of the theory of optimum design of trusses of minimum weight or of minimal compliance; the basis of 2D Michell theory for a single load case; kinematic and static approaches; 2D benchmark constructions including Hemp's structures and optimal cantilevers; L-shape domain problems, three forces problem in 2D, bridge problems; revisiting the old - and delivering new - 3D benchmark solutions; extension to multiple load conditions; Prager-Rozvany grillages; the theory of funiculars and archgrids; the methods of optimum design of shape and material inspired by the theory of Michell structures, industrial applications. The book can be useful for graduate students, professional engineers and researchers specializing in the Optimum Design and in Topology Optimization in general.

REDUCED BASIS METHODS FOR PARTIAL DIFFERENTIAL EQUATIONS

AN INTRODUCTION

Springer This book provides a basic introduction to reduced basis (RB) methods for problems involving the repeated solution of partial differential equations (PDEs) arising from engineering and applied sciences, such as PDEs depending on several parameters and PDE-constrained optimization. The book presents a general mathematical formulation of RB methods, analyzes their fundamental theoretical properties, discusses the related algorithmic and implementation aspects, and highlights their built-in algebraic and geometric structures. More specifically, the authors discuss alternative strategies for constructing accurate RB spaces using greedy algorithms and proper orthogonal decomposition techniques, investigate their approximation properties and analyze offline-online decomposition strategies aimed at the reduction of computational complexity. Furthermore, they carry out both a priori and a posteriori error analysis. The whole mathematical presentation is made more stimulating by the use of representative examples of applicative interest in the context of both linear and nonlinear PDEs. Moreover, the inclusion of many pseudocodes allows the reader to easily implement the algorithms illustrated throughout the text. The book will be ideal for upper undergraduate students and, more generally, people interested in scientific computing. All these pseudocodes are in fact implemented in a MATLAB package that is freely available at <https://github.com/redbkit>

ELEMENTS OF APPLIED BIFURCATION THEORY

Springer Science & Business Media Providing readers with a solid basis in dynamical systems theory, as well as explicit procedures for application of general mathematical results to particular problems, the focus here is on efficient numerical implementations of the developed techniques. The book is designed for advanced undergraduates or graduates in applied mathematics, as well as for Ph.D. students and researchers in physics, biology, engineering, and economics who use dynamical systems as model tools in their studies. A moderate mathematical background is assumed, and, whenever possible, only elementary mathematical tools are used. This new edition preserves the structure of the first while updating the context to incorporate recent theoretical developments, in particular new and improved numerical methods for bifurcation analysis.

ADVANCED NUMERICAL METHODS FOR DIFFERENTIAL EQUATIONS

APPLICATIONS IN SCIENCE AND ENGINEERING

CRC Press "Mathematical models are used to convert real-life problems using mathematical concepts and language. These models are governed by differential equations whose solutions make it easy to understand real-life problems and can be applied to engineering and science disciplines. This book presents numerical methods for solving various mathematical models. This book offers real-life applications, includes research problems on numerical treatment, and shows how to develop the numerical methods for solving problems. The book also covers theory and applications in engineering and science. Engineers, mathematicians, scientists, and researchers working on real-life mathematical problems will find this book useful"--

COMPUTATIONAL SOLUTIONS FOR KNOWLEDGE, ART, AND ENTERTAINMENT: INFORMATION EXCHANGE BEYOND TEXT

INFORMATION EXCHANGE BEYOND TEXT

IGI Global As interactive application software such as apps, installations, and multimedia presentations have become pervasive in everyday life, more and more computer scientists, engineers, and technology experts acknowledge the influence that exists beyond visual explanations. Computational Solutions for Knowledge, Art, and Entertainment: Information Exchange Beyond Text focuses on the methods of depicting knowledge-based concepts in order to assert power beyond a visual explanation of scientific and computational notions. This book combines formal descriptions with graphical presentations and encourages readers to interact by creating visual solutions for science-related concepts and presenting data. This reference is essential for researchers, computer scientists, and academics focusing on the integration of science, technology, computing, art, and mathematics for visual problem solving.

DROPLETS AND SPRAYS: SIMPLE MODELS OF COMPLEX PROCESSES

Springer Nature This book acts as a guide to simple models that describe some of the complex fluid dynamics, heat/mass transfer and combustion processes in droplets and sprays. Attention is focused mainly on the use of classical hydrodynamics, and a combination of kinetic and hydrodynamic models, to analyse the heating and evaporation of mono- and multi-component droplets. The models were developed for cases when small and large numbers of components are present in droplets. Some of these models are used for the prediction of time to puffing/micro-explosion of composite water/fuel droplets – processes that are widely used in combustion devices to stimulate disintegration of relatively large droplets into smaller ones. The predictions of numerical codes based on these models are validated against experimental results where possible. In most of the models, droplets are assumed to be spherical; some preliminary results of the generalisation of these models to the case of non-spherical droplets, approximating them as spheroids, are presented.

SPACES OF MEASURES AND THEIR APPLICATIONS TO STRUCTURED POPULATION MODELS

Cambridge University Press Presents a comprehensive analytical framework for structured population models in spaces of Radon measures and their numerical approximation.

DIGITAL COMMUNICATION AND LEARNING

CHANGES AND CHALLENGES

Springer Nature

HANDBOOK OF RESEARCH ON EDUCATION AND TECHNOLOGY IN A CHANGING SOCIETY

IGI Global Technology has become an integral part of our everyday lives. This trend in ubiquitous technology has also found its way into the learning process at every level of education. The Handbook of Research on Education and Technology in a Changing Society offers an in-depth description of concepts related to different areas, issues, and trends within education and technological integration in modern society. This handbook includes definitions and terms, as well as explanations of concepts and processes regarding the integration of technology into education. Addressing all pertinent issues and concerns in education and technology in our changing society with a wide breadth of discussion, this handbook is an essential collection for educators, academicians, students, researchers, and librarians.

100 TECHNICAL QUESTIONS AND ANSWERS FOR JOB INTERVIEW OFFSHORE DRILLING RIGS

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BOND PRICING AND YIELD CURVE MODELING

A STRUCTURAL APPROACH

Rebonato provides an authoritative, clear, and up-to-date explanation of the cutting-edge innovations in affine modeling for government bonds, and provides readers with the precise tools to develop their own models. This book combines precise theory with up-to-date empirical evidence to build, with the minimum mathematical sophistication required for the task, a critical understanding of what drives the government bond market.

PRINCIPLES OF DATA SCIENCE

Springer Nature This book provides readers with a thorough understanding of various research areas within the field of data science. The book introduces readers to various

techniques for data acquisition, extraction, and cleaning, data summarizing and modeling, data analysis and communication techniques, data science tools, deep learning, and various data science applications. Researchers can extract and conclude various future ideas and topics that could result in potential publications or thesis. Furthermore, this book contributes to Data Scientists' preparation and to enhancing their knowledge of the field. The book provides a rich collection of manuscripts in highly regarded data science topics, edited by professors with long experience in the field of data science. Introduces various techniques, methods, and algorithms adopted by Data Science experts Provides a detailed explanation of data science perceptions, reinforced by practical examples Presents a road map of future trends suitable for innovative data science research and practice

ASSESSING MATHEMATICAL LITERACY

THE PISA EXPERIENCE

Springer This book describes the design, development, delivery and impact of the mathematics assessment for the OECD Programme for International Student Assessment (PISA). First, the origins of PISA's concept of mathematical literacy are discussed, highlighting the underlying themes of mathematics as preparation for life after school and mathematical modelling of the real world, and clarifying PISA's position within this part of the mathematics education territory. The PISA mathematics framework is introduced as a significant milestone in the development and dissemination of these ideas. The underlying mathematical competencies on which mathematical literacy so strongly depends are described, along with a scheme to use them in item creation and analysis. The development and implementation of the PISA survey and the consequences for the outcomes are thoroughly discussed. Different kinds of items for both paper-based and computer-based PISA surveys are exemplified by many publicly released items along with details of scoring. The novel survey of the opportunity students have had to learn the mathematics promoted through PISA is explained. The book concludes by surveying international impact. It presents viewpoints of mathematics educators on how PISA and its constituent ideas and methods have influenced teaching and learning practices, curriculum arrangements, assessment practices, and the educational debate more generally in fourteen countries.

ITERATIVE METHODS FOR SPARSE LINEAR SYSTEMS

SECOND EDITION

SIAM Mathematics of Computing -- General.

SUSTAINABLE ENTREPRENEURSHIP AND INVESTMENTS IN THE GREEN ECONOMY

IGI Global The protection of the environment and economic growth are two important aspects of modern sustainability initiatives. By placing these two together, a competitive advantage is developed by utilizing green factors with investing. Sustainable Entrepreneurship and Investments in the Green Economy is an essential reference publication for the latest research on green entrepreneurship and its impacts on investment activity within sustainable development and competitive markets. Featuring coverage on a broad range of topics and perspectives such as contemporary enterprises, global feeding, and waste management, this book is ideally designed for practitioners, students, and academicians seeking current research on green entrepreneurship and investments.

ADVANCED COMPUTING IN INDUSTRIAL MATHEMATICS

REVISED SELECTED PAPERS OF THE 10TH ANNUAL MEETING OF THE BULGARIAN SECTION OF SIAM DECEMBER 21-22, 2015, SOFIA, BULGARIA

Springer This book presents recent research on Advanced Computing in Industrial Mathematics, which is one of the most prominent interdisciplinary areas and combines mathematics, computer science, scientific computations, engineering, physics, chemistry, medicine, etc. Further, the book presents the tools of Industrial Mathematics, which are based on mathematical models, and the corresponding computer codes, which are used to perform virtual experiments to obtain new data or to better understand the existing experimental results. The book gathers the peer-reviewed papers presented during the 10th Annual Meeting of the Bulgarian Section of SIAM (BGSIAM) from December 21 to 22, 2015 in Sofia, Bulgaria.

THE MATHEMATICAL THEORY OF COMMUNICATION

University of Illinois Press Scientific knowledge grows at a phenomenal pace--but few books have had as lasting an impact or played as important a role in our modern world as *The Mathematical Theory of Communication*, published originally as a paper on communication theory more than fifty years ago. Republished in book form shortly thereafter, it has since gone through four hardcover and sixteen paperback printings. It is a revolutionary work, astounding in its foresight and contemporaneity. The University of Illinois Press is pleased and honored to issue this commemorative reprinting of a classic.

THE NATIONAL CURRICULUM IN ENGLAND - HANDBOOK FOR PRIMARY TEACHERS

Get ready for the biggest curriculum change in more than a decade! To help teachers to deliver the new Curriculum, Scholastic has published the first complete printed version for Key Stages 1 and 2. Full programmes of study for all 11 primary subjects are included along with practical advice on how to implement the curriculum using Scholastic's time-saving resources - including the 1 million best-selling 100s series.

NONLINEAR OPTIMIZATION

METHODS AND APPLICATIONS

Springer Nature This book provides a comprehensive introduction to nonlinear programming, featuring a broad range of applications and solution methods in the field of continuous optimization. It begins with a summary of classical results on unconstrained optimization, followed by a wealth of applications from a diverse mix of fields, e.g. location analysis, traffic planning, and water quality management, to name but a few. In turn, the book presents a formal description of optimality conditions, followed by an in-depth discussion of the main solution techniques. Each method is formally described, and then fully solved using a numerical example.

THE SUSTAINABLE CITY

Columbia University Press Living sustainably is not just about preserving the wilderness or keeping nature pristine. The transition to a green economy depends on cities. For the first time in human history, the majority of the people on the planet live in urban areas. If we are to avert climate catastrophe, we will need our cities to coexist with nature without destroying it. Many places are already investing in the infrastructure of the future—including renewable energy, energy efficiency, mass and personal transit, and advanced sewage and waste management—but the modern city still has a long way to go. In *The Sustainable City*, Steven Cohen provides a broad and engaging overview of the urban systems of the twenty-first century, surveying policies and projects already under way in cities around the world and pointing to more ways progress can be made. Cohen discusses the sustainable city from an organizational-management and public-policy perspective that emphasizes the local level, looking at case studies of existing legislation, programs, and public-private partnerships that strive to align modern urban life and sustainability. From waste management in Beijing to energy infrastructure in Africa to public space in Washington, D.C., there are concrete examples of what we can do right now. Cohen synthesizes the disparate strands of sustainable city planning in an approachable and applicable guide that highlights how these issues touch our lives on a daily basis, whether the transportation we take, where our energy comes from, or what becomes of our food waste. Providing recommendations and insights with immediacy and relevance, this book has invaluable lessons for anyone seeking to link public policy to promoting a sustainable lifestyle.