

Download Ebook PRIMAL Origin Primal 0 5 Read Pdf Free

Circuit Analysis with PSpice Handbook of Multivalued Analysis Linear Programming with MATLAB **Analytical Methods for Network Congestion Control** *Kinematic Analysis of Parallel Manipulators by Algebraic Screw Theory* **Convexity and Optimization in Rn** **Linear Optimization and Duality** *Network Optimization: Continuous and Discrete Models* **OPERATIONS RESEARCH : PRINCIPLES AND APPLICATIONS** Sexual Paradox: Complementarity, Reproductive Conflict and Human Emergence **Algorithms and Data Structures** **Linear Network Optimization** *Linear Programming and its Applications* *Tutorials on Emerging Methodologies and Applications in Operations Research* *Does God Exist? Nonlinear Programming* **Liquidity Choice and Misallocation of Credit** **RNA World Hypothesis and the Origin of Life: Astrochemistry Perspective** *The Century Dictionary* **Linear Programming and Network Flows** *Learning with Kernels* **Data Envelopment Analysis** **Content Delivery Networks Approaches to the Theory of Optimization** **Marketing Research Report Classification Methods for Remotely Sensed Data** Management Science, Logistics, and Operations Research **Origins of Life: The Primal Self-Organization** **Selected Works of Oded Schramm** **Encyclopedia of Computer Science and Technology** **Convex Optimization** **Euclidean Distance Geometry 2e** **A Complete Concordance to Science and Health** **Mathematical Economics** *Algorithm Theory -- SWAT 2012 Inference and Learning from Data* **International Journal of Mathematical Modeling, Simulation and Applications** **Nonlinear Programming** Principles of Network Economics Duality in Optimization and Variational Inequalities **New Developments in Contact Problems**

Content Delivery Networks Dec 09 2020 "Content Delivery Networks" enables the readers to understand the basics, to identify the underlying technology, to summarize their knowledge on concepts, ideas, principles and various paradigms which span on broad CDNs areas. Therefore, aspects of CDNs in terms of basics, design process, practice, techniques, performances, platforms, applications, and experimental results have been presented in a proper order. Fundamental methods, initiatives, significant research results, as well as references for further study have also been provided. Comparison of different design and development approaches are described at the appropriate places so that new researchers as well as advanced practitioners can use the CDNs evaluation as a research roadmap. All the contributions have been reviewed, edited, processed, and placed in the appropriate order to maintain

consistency so that any reader irrespective of their level of knowledge and technological skills in CDNs would get the most out of it. The book is organized into three parts, namely, Part I: CDN Fundamentals; Part II: CDN Modeling and Performance; and Part III: Advanced CDN Platforms and Applications. The organization ensures the smooth flow of material as successive chapters build on prior ones.

Network Optimization: Continuous and Discrete Models Mar 24 2022 An insightful, comprehensive, and up-to-date treatment of linear, nonlinear, and discrete/combinatorial network optimization problems, their applications, and their analytical and algorithmic methodology. It covers extensively theory, algorithms, and applications, and it aims to bridge the gap between linear and nonlinear network optimization on one hand, and integer/combinatorial network optimization on the other. It complements several of our books: *Convex Optimization Theory* (Athena Scientific, 2009), *Convex Optimization Algorithms* (Athena Scientific, 2015), *Introduction to Linear Optimization* (Athena Scientific, 1997), *Nonlinear Programming* (Athena Scientific, 1999), as well as our other book on the subject of network optimization *Network Flows and Monotropic Optimization* (Athena Scientific, 1998).

Linear Programming and its Applications Oct 19 2021 In the pages of this text readers will find nothing less than a unified treatment of linear programming. Without sacrificing mathematical rigor, the main emphasis of the book is on models and applications. The most important classes of problems are surveyed and presented by means of mathematical formulations, followed by solution methods and a discussion of a variety of "what-if" scenarios. Non-simplex based solution methods and newer developments such as interior point methods are covered.

New Developments in Contact Problems Jun 22 2019 The book gives an overview on formulation, mathematical analysis and numerical solution procedures of contact problems. In this respect the book should be of value to applied mathematicians and engineers who are concerned with contact mechanics.

Linear Programming and Network Flows Mar 12 2021 The authoritative guide to modeling and solving complex problems with linear programming—extensively revised, expanded, and updated. The only book to treat both linear programming techniques and network flows under one cover, *Linear Programming and Network Flows*, Fourth Edition has been completely updated with the latest developments on the topic. This new edition continues to successfully emphasize modeling concepts, the design and analysis of algorithms, and implementation strategies for problems in a variety of fields, including industrial engineering, management science, operations research, computer science, and mathematics. The book begins with basic results on linear algebra and convex analysis, and a geometrically motivated study of the structure of polyhedral sets is provided. Subsequent chapters include coverage of cycling in the simplex method, interior point methods, and sensitivity and parametric analysis. Newly added topics in the Fourth Edition include: The cycling phenomenon in linear programming and the geometry of cycling Duality relationships with cycling Elaboration on stable factorizations and implementation strategies Stabilized column generation and acceleration of Benders

and Dantzig-Wolfe decomposition methods Line search and dual ascent ideas for the out-of-kilter algorithm Heap implementation comments, negative cost circuit insights, and additional convergence analyses for shortest path problems The authors present concepts and techniques that are illustrated by numerical examples along with insights complete with detailed mathematical analysis and justification. An emphasis is placed on providing geometric viewpoints and economic interpretations as well as strengthening the understanding of the fundamental ideas. Each chapter is accompanied by Notes and References sections that provide historical developments in addition to current and future trends. Updated exercises allow readers to test their comprehension of the presented material, and extensive references provide resources for further study. *Linear Programming and Network Flows, Fourth Edition* is an excellent book for linear programming and network flow courses at the upper-undergraduate and graduate levels. It is also a valuable resource for applied scientists who would like to refresh their understanding of linear programming and network flow techniques.

Origins of Life: The Primal Self-Organization Jul 04 2020 If theoretical physicists can seriously entertain canonical “standard models” even for the big-bang generation of the entire universe, why cannot life scientists reach a consensus on how life has emerged and settled on this planet? Scientists are hindered by conceptual gaps between bottom-up inferences (from early Earth geological conditions) and top-down extrapolations (from modern life forms to common ancestral states). This book challenges several widely held assumptions and argues for alternative approaches instead. Primal syntheses (literally or figuratively speaking) are called for in at least five major areas. (1) The first RNA-like molecules may have been selected by solar light as being exceptionally photostable. (2) Photosynthetically active minerals and reduced phosphorus compounds could have efficiently coupled the persistent natural energy flows to the primordial metabolism. (3) Stochastic, uncoded peptides may have kick-started an ever-tightening co-evolution of proteins and nucleic acids. (4) The living fossils from the primeval RNA World thrive within modern cells. (5) From the inherently complex protocellular associations preceding the consolidation of integral genomes, eukaryotic cell organization may have evolved more naturally than simple prokaryote-like life forms. – If this book can motivate dedicated researchers to further explore the alternative mechanisms presented, it will have served its purpose well.

Inference and Learning from Data Nov 27 2019 Discover core topics in inference and learning with the first volume of this extraordinary three-volume set.

Convexity and Optimization in \mathbb{R}^n May 26 2022 A comprehensive introduction to convexity and optimization in \mathbb{R}^n This book presents the mathematics of finite dimensional constrained optimization problems. It provides a basis for the further mathematical study of convexity, of more general optimization problems, and of numerical algorithms for the solution of finite dimensional optimization problems. For readers who do not have the requisite background in real analysis, the author provides a chapter covering this material. The text features abundant exercises and problems designed to lead the reader to a fundamental understanding of the material. *Convexity and Optimization in \mathbb{R}^n* provides detailed discussion of: * Requisite topics in real analysis * Convex sets * Convex

functions * Optimization problems * Convex programming and duality * The simplex method A detailed bibliography is included for further study and an index offers quick reference. Suitable as a text for both graduate and undergraduate students in mathematics and engineering, this accessible text is written from extensively class-tested notes.

Kinematic Analysis of Parallel Manipulators by Algebraic Screw Theory Jun 26 2022 This book reviews the fundamentals of screw theory concerned with velocity analysis of rigid-bodies, confirmed with detailed and explicit proofs. The author additionally investigates acceleration, jerk, and hyper-jerk analyses of rigid-bodies following the trend of the velocity analysis. With the material provided in this book, readers can extend the theory of screws into the kinematics of optional order of rigid-bodies. Illustrative examples and exercises to reinforce learning are provided. Of particular note, the kinematics of emblematic parallel manipulators, such as the Delta robot as well as the original Gough and Stewart platforms are revisited applying, in addition to the theory of screws, new methods devoted to simplify the corresponding forward-displacement analysis, a challenging task for most parallel manipulators.

RNA World Hypothesis and the Origin of Life: Astrochemistry Perspective May 14 2021

Data Envelopment Analysis Jan 10 2021 Using the neo-classical theory of production economics as the analytical framework, this book, first published in 2004, provides a unified and easily comprehensible, yet fairly rigorous, exposition of the core literature on data envelopment analysis (DEA) for readers based in different disciplines. The various DEA models are developed as nonparametric alternatives to the econometric models. Apart from the standard fare consisting of the basic input- and output-oriented DEA models formulated by Charnes, Cooper, and Rhodes, and Banker, Charnes, and Cooper, the book covers developments such as the directional distance function, free disposal hull (FDH) analysis, non-radial measures of efficiency, multiplier bounds, mergers and break-up of firms, and measurement of productivity change through the Malmquist total factor productivity index. The chapter on efficiency measurement using market prices provides the critical link between DEA and the neo-classical theory of a competitive firm. The book also covers several forms of stochastic DEA in detail.

Principles of Network Economics Aug 24 2019 Network problems are manifold and extremely complex. Many problems result from engineering details or mathematical difficulties, others are caused by disregarding economic principles and imperfections of markets. The text provides a fairly integrated approach of transportation related "network problems" and their "solutions" with emphasis on economics or, more precisely, microeconomic theory.

Liquidity Choice and Misallocation of Credit Jun 14 2021 This paper studies a novel type of misallocation of credit between investments of varying liquidity. One type of investment is more liquid, i.e., its return is more pledgeable, and the other is more productive. Low liquidities of both investment types imply that the allocation of credit is constrained inefficient and that there is overinvestment in the liquid type. Constrained inefficient equilibria feature non-positive, i.e., one less than or equal the economy's growth rate, and yet too high interest rate, too much investment and too little consumption. Financial development can reduce long-

term welfare and output in a constrained inefficient equilibrium if it raises the liquidity of the liquid type. I show a maximum liquid asset ratio or a simple debt tax can achieve constrained efficiency. Introducing government bonds can make Pareto improvement whenever it does not raise the interest rate.

Mathematical Economics Jan 28 2020 Graduate-level text provides complete and rigorous expositions of economic models analyzed primarily from the point of view of their mathematical properties, followed by relevant mathematical reviews. Part I covers optimizing theory; Parts II and III survey static and dynamic economic models; and Part IV contains the mathematical reviews, which range from linear algebra to point-to-set mappings.

Linear Programming with MATLAB Aug 29 2022 A self-contained introduction to linear programming using MATLAB® software to elucidate the development of algorithms and theory. Exercises are included in each chapter, and additional information is provided in two appendices and an accompanying Web site. Only a basic knowledge of linear algebra and calculus is required.

Algorithms and Data Structures Dec 21 2021 The papers in this volume were presented at the Third Workshop on Algorithms and Data Structures (WADS '93), held in Montreal, Canada, August 1993. The volume opens with five invited presentations: "Computing the all-pairs longest chains in the plane" by M.J. Atallah and D.Z. Chen, "Towards a better understanding of pure packet routing" by A. Borodin, "Tolerating faults in meshes and other networks" (abstract) by R. Cole, "A generalization of binary search" by R.M. Karp, and "Groups and algebraic complexity" (abstract) by A.C. Yao. The volume continues with 52 regular presentations selected from 165 submissions, each of which was evaluated by at least three program committee members, many of whom called upon additional reviewers.

Duality in Optimization and Variational Inequalities Jul 24 2019 This comprehensive volume covers a wide range of duality topics ranging from simple ideas in network flows to complex issues in non-convex optimization and multicriteria problems. In addition, it examines duality in the context of variational inequalities and vector variational inequalities, as generalizations to optimization. Duality in Optimization and Variational Inequalities is intended for researchers and practitioners of optimization with the aim of enhancing their understanding of duality. It provides a wider appreciation of optimality conditions in various scenarios and under different assumptions. It will enable the reader to use duality to devise more effective computational methods, and to aid more meaningful interpretation of optimization and variational inequality problems.

Management Science, Logistics, and Operations Research Aug 05 2020 "This book examines related research in decision, management, and other behavioral sciences in order to exchange and collaborate on information among business, industry, and government, providing innovative theories and practices in operations research"--Provided by publisher.

Circuit Analysis with PSpice Oct 31 2022 Electric circuits, and their electronic circuit extensions, are found in all electrical and electronic equipment; including: household equipment, lighting, heating, air conditioning, control systems in both homes and

commercial buildings, computers, consumer electronics, and means of transportation, such as cars, buses, trains, ships, and airplanes. Electric circuit analysis is essential for designing all these systems. Electric circuit analysis is a foundation for all hardware courses taken by students in electrical engineering and allied fields, such as electronics, computer hardware, communications and control systems, and electric power. This book is intended to help students master basic electric circuit analysis, as an essential component of their professional education. Furthermore, the objective of this book is to approach circuit analysis by developing a sound understanding of fundamentals and a problem-solving methodology that encourages critical thinking.

Learning with Kernels Feb 08 2021 A comprehensive introduction to Support Vector Machines and related kernel methods. In the 1990s, a new type of learning algorithm was developed, based on results from statistical learning theory: the Support Vector Machine (SVM). This gave rise to a new class of theoretically elegant learning machines that use a central concept of SVMs—kernels—for a number of learning tasks. Kernel machines provide a modular framework that can be adapted to different tasks and domains by the choice of the kernel function and the base algorithm. They are replacing neural networks in a variety of fields, including engineering, information retrieval, and bioinformatics. *Learning with Kernels* provides an introduction to SVMs and related kernel methods. Although the book begins with the basics, it also includes the latest research. It provides all of the concepts necessary to enable a reader equipped with some basic mathematical knowledge to enter the world of machine learning using theoretically well-founded yet easy-to-use kernel algorithms and to understand and apply the powerful algorithms that have been developed over the last few years.

A Complete Concordance to Science and Health Feb 29 2020

Approaches to the Theory of Optimization Nov 07 2020 A concise account which finds the optimal solution to mathematical problems arising in economics, engineering, the social and mathematical sciences.

The Century Dictionary Apr 12 2021

Sexual Paradox: Complementarity, Reproductive Conflict and Human Emergence Jan 22 2022 Unlocks the keys to the paradox of how sexual selection fertilized the explosion of culture, and the resulting fallout, in sexual dominion of man over woman and nature. How sexuality generates the universe, through symmetry-broken complementarity. The implicit conflict of interests of sexual intrigue, in the prisoners' dilemma, and its ecstatic resolution in the cosmology of love. Sexual dominance as a koan for planetary crises. 560 pages containing 270 illustrations.

Nonlinear Programming Jul 16 2021 This overview provides a single-volume treatment of key algorithms and theories. Begins with the derivation of optimality conditions and discussions of convex programming, duality, generalized convexity, and analysis of selected nonlinear programs, and then explores techniques for numerical solutions and unconstrained optimization methods. 1976 edition. Includes 58 figures and 7 tables.

Linear Network Optimization Nov 19 2021 Linear Network Optimization presents a thorough treatment of classical approaches to

network problems such as shortest path, max-flow, assignment, transportation, and minimum cost flow problems.

Algorithm Theory -- SWAT 2012 Dec 29 2019 This book constitutes the refereed proceedings of the 13th International Scandinavian Symposium and Workshops on Algorithm Theory, SWAT 2012, held in Helsinki, Finland, in July 2012, co-located with the 23rd Annual Symposium on Combinatorial Pattern Matching, CPM 2012. The 34 papers were carefully reviewed and selected from a total of 127 submissions. The papers present original research and cover a wide range of topics in the field of design and analysis of algorithms and data structures.

Nonlinear Programming Sep 25 2019 This book provides a comprehensive and accessible presentation of algorithms for solving continuous optimization problems. It relies on rigorous mathematical analysis, but also aims at an intuitive exposition that makes use of visualization where possible. It places particular emphasis on modern developments, and their widespread applications in fields such as large-scale resource allocation problems, signal processing, and machine learning. The 3rd edition brings the book in closer harmony with the companion works *Convex Optimization Theory* (Athena Scientific, 2009), *Convex Optimization Algorithms* (Athena Scientific, 2015), *Convex Analysis and Optimization* (Athena Scientific, 2003), and *Network Optimization* (Athena Scientific, 1998). These works are complementary in that they deal primarily with convex, possibly nondifferentiable, optimization problems and rely on convex analysis. By contrast the nonlinear programming book focuses primarily on analytical and computational methods for possibly nonconvex differentiable problems. It relies primarily on calculus and variational analysis, yet it still contains a detailed presentation of duality theory and its uses for both convex and nonconvex problems. This on-line edition contains detailed solutions to all the theoretical book exercises. Among its special features, the book: Provides extensive coverage of iterative optimization methods within a unifying framework Covers in depth duality theory from both a variational and a geometric point of view Provides a detailed treatment of interior point methods for linear programming Includes much new material on a number of topics, such as proximal algorithms, alternating direction methods of multipliers, and conic programming Focuses on large-scale optimization topics of much current interest, such as first order methods, incremental methods, and distributed asynchronous computation, and their applications in machine learning, signal processing, neural network training, and big data applications Includes a large number of examples and exercises Was developed through extensive classroom use in first-year graduate courses

Convex Optimization Euclidean Distance Geometry 2e Mar 31 2020 Convex Analysis is an emerging calculus of inequalities while Convex Optimization is its application. Analysis is the domain of the mathematician while Optimization belongs to the engineer. In layman's terms, the mathematical science of Optimization is a study of how to make good choices when confronted with conflicting requirements and demands. The qualifier Convex means: when an optimal solution is found, then it is guaranteed to be a best solution; there is no better choice. As any convex optimization problem has geometric interpretation, this book is about convex geometry (with particular attention to distance geometry) and nonconvex, combinatorial, and geometrical problems that can be relaxed or transformed

into convexity. A virtual flood of new applications follows by epiphany that many problems, presumed nonconvex, can be so transformed. This is a BLACK & WHITE paperback. A hardcover with full color interior, as originally conceived, is available at lulu.com/spotlight/dattorro

Encyclopedia of Computer Science and Technology May 02 2020 "This comprehensive reference work provides immediate, fingertip access to state-of-the-art technology in nearly 700 self-contained articles written by over 900 international authorities. Each article in the Encyclopedia features current developments and trends in computers, software, vendors, and applications...extensive bibliographies of leading figures in the field, such as Samuel Alexander, John von Neumann, and Norbert Wiener...and in-depth analysis of future directions."

Classification Methods for Remotely Sensed Data Sep 05 2020 Since the publishing of the first edition of Classification Methods for Remotely Sensed Data in 2001, the field of pattern recognition has expanded in many new directions that make use of new technologies to capture data and more powerful computers to mine and process it. What seemed visionary but a decade ago is now being put to use and refined in commercial applications as well as military ones. Keeping abreast of these new developments, Classification Methods for Remotely Sensed Data, Second Edition provides a comprehensive and up-to-date review of the entire field of classification methods applied to remotely sensed data. This second edition provides seven fully revised chapters and two new chapters covering support vector machines (SVM) and decision trees. It includes updated discussions and descriptions of Earth observation missions along with updated bibliographic references. After an introduction to the basics, the text provides a detailed discussion of different approaches to image classification, including maximum likelihood, fuzzy sets, and artificial neural networks. This cutting-edge resource: Presents a number of approaches to solving the problem of allocation of data to one of several classes Covers potential approaches to the use of decision trees Describes developments such as boosting and random forest generation Reviews lopping branches that do not contribute to the effectiveness of the decision trees Complete with detailed comparisons, experimental results, and discussions for each classification method introduced, this book will bolster the work of researchers and developers by giving them access to new developments. It also provides students with a solid foundation in remote sensing data classification methods.

Analytical Methods for Network Congestion Control Jul 28 2022 The congestion control mechanism has been responsible for maintaining stability as the Internet scaled up by many orders of magnitude in size, speed, traffic volume, coverage, and complexity over the last three decades. In this book, we develop a coherent theory of congestion control from the ground up to help understand and design these algorithms. We model network traffic as fluids that flow from sources to destinations and model congestion control algorithms as feedback dynamical systems. We show that the model is well defined. We characterize its equilibrium points and prove their stability. We will use several real protocols for illustration but the emphasis will be on various mathematical techniques for

algorithm analysis. Specifically we are interested in four questions: 1. How are congestion control algorithms modelled? 2. Are the models well defined? 3. How are the equilibrium points of a congestion control model characterized? 4. How are the stability of these equilibrium points analyzed? For each topic, we first present analytical tools, from convex optimization, to control and dynamical systems, Lyapunov and Nyquist stability theorems, and to projection and contraction theorems. We then apply these basic tools to congestion control algorithms and rigorously prove their equilibrium and stability properties. A notable feature of this book is the careful treatment of projected dynamics that introduces discontinuity in our differential equations. Even though our development is carried out in the context of congestion control, the set of system theoretic tools employed and the process of understanding a physical system, building mathematical models, and analyzing these models for insights have a much wider applicability than to congestion control.

Marketing Research Report Oct 07 2020

OPERATIONS RESEARCH : PRINCIPLES AND APPLICATIONS Feb 20 2022 This text, now in the Third Edition, aims to provide students with a clear, well-structured and comprehensive treatment of the theory and applications of operations research. The methodology used is to first introduce the students to the fundamental concepts through numerical illustrations and then explain the underlying theory, wherever required. Inclusion of case studies in the existing chapters makes learning easier and more effective. The book introduces the readers to various models of Operations Research (OR), such as transportation model, assignment model, inventory models, queueing theory and integer programming models. Various techniques to solve OR problems' faced by managers are also discussed. Separate chapters are devoted to Linear Programming, Dynamic Programming and Quadratic Programming which greatly help in the decision-making process. The text facilitates easy comprehension of topics by the students due to inclusion of: • Examples and situations from the Indian context. • Numerous exercise problems arranged in a graded manner. • A large number of illustrative examples. The text is primarily intended for the postgraduate students of management, computer applications, commerce, mathematics and statistics. Besides, the undergraduate students of mechanical engineering and industrial engineering will find this book extremely useful. In addition, this text can also be used as a reference by OR analysts and operations managers. NEW TO THE THIRD EDITION • Includes two new chapters: – Chapter 14: Project Management—PERT and CPM – Chapter 15: Miscellaneous Topics (Game Theory, Sequencing and Scheduling, Simulation, and Replacement Models) • Incorporates more examples in the existing chapters to illustrate new models, algorithms and concepts • Provides short questions and additional numerical problems for practice in each chapter

Handbook of Multivalued Analysis Sep 29 2022 In volume I we developed the tools of "Multivalued Analysis. " In this volume we examine the applications. After all, the initial impetus for the development of the theory of set-valued functions came from its applications in areas such as control theory and mathematical economics. In fact, the needs of control theory, in particular the study of

systems with a priori feedback, led to the systematic investigation of differential equations with a multi valued vector field (differential inclusions). For this reason, we start this volume with three chapters devoted to set-valued differential equations. However, in contrast to the existing books on the subject (i. e. J. -P. Aubin - A. Cellina: "Differential Inclusions," Springer-Verlag, 1983, and Deimling: "Multivalued Differential Equations," W. De Gruyter, 1992), here we focus on "Evolution Inclusions," which are evolution equations with multi valued terms. Evolution equations were raised to prominence with the development of the linear semigroup theory by Hille and Yosida initially, with subsequent important contributions by Kato, Phillips and Lions. This theory allowed a successful unified treatment of some apparently different classes of nonstationary linear partial differential equations and linear functional equations. The needs of dealing with applied problems and the natural tendency to extend the linear theory to the nonlinear case led to the development of the nonlinear semigroup theory, which became a very effective tool in the analysis of broad classes of nonlinear evolution equations.

Linear Optimization and Duality Apr 24 2022 Linear Optimization and Duality: A Modern Exposition departs from convention in significant ways. Standard linear programming textbooks present the material in the order in which it was discovered. Duality is treated as a difficult add-on after coverage of formulation, the simplex method, and polyhedral theory. Students end up without knowing duality in their bones. This text brings in duality in Chapter 1 and carries duality all the way through the exposition. Chapter 1 gives a general definition of duality that shows the dual aspects of a matrix as a column of rows and a row of columns. The proof of weak duality in Chapter 2 is shown via the Lagrangian, which relies on matrix duality. The first three LP formulation examples in Chapter 3 are classic primal-dual pairs including the diet problem and 2-person zero sum games. For many engineering students, optimization is their first immersion in rigorous mathematics. Conventional texts assume a level of mathematical sophistication they don't have. This text embeds dozens of reading tips and hundreds of answered questions to guide such students. Features Emphasis on duality throughout Practical tips for modeling and computation Coverage of computational complexity and data structures Exercises and problems based on the learning theory concept of the zone of proximal development Guidance for the mathematically unsophisticated reader About the Author Craig A. Tovey is a professor in the H. Milton Stewart School of Industrial and Systems Engineering at Georgia Institute of Technology. Dr. Tovey received an AB from Harvard College, an MS in computer science and a PhD in operations research from Stanford University. His principal activities are in operations research and its interdisciplinary applications. He received a Presidential Young Investigator Award and the Jacob Wolfowitz Prize for research in heuristics. He was named an Institute Fellow at Georgia Tech, and was recognized by the ACM Special Interest Group on Electronic Commerce with the Test of Time Award. Dr. Tovey received the 2016 Golden Goose Award for his research on bee foraging behavior leading to the development of the Honey Bee Algorithm.

Does God Exist? Aug 17 2021 Does God exist? Who is God? And can we ultimately trust in any reality? These questions have been

among the greatest subjects of human speculation since history began, but not until modern times has the reality of God been so strongly called into doubt. In this monumental study, written for men and women of all faiths (and of none), Hans K ng, the most renowned and controversial theologian in the world today, first traces the rise of modern atheism in the works of such great thinkers as Descartes, Pascal, Feuerbach, Marx, Nietzsche and Freud, and then demonstrates--brilliantly and in terms that make sense to us today--why a yes to God remains a more reasonable and responsible belief than its alternative, nihilism.

Selected Works of Oded Schramm Jun 02 2020 This volume is dedicated to the memory of the late Oded Schramm (1961-2008), distinguished mathematician. Throughout his career, Schramm made profound and beautiful contributions to mathematics that will have a lasting influence. In these two volumes, Editors Itai Benjamini and Olle H ggstr m have collected some of his papers, supplemented with three survey papers by Steffen Rohde, H ggstr m and Christophe Garban that further elucidate his work. The papers within are a representative collection that shows the breadth, depth, enthusiasm and clarity of his work, with sections on Geometry, Noise Sensitivity, Random Walks and Graph Limits, Percolation, and finally Schramm-Loewner Evolution. An introduction by the Editors and a comprehensive bibliography of Schramm's publications complete the volume. The book will be of especial interest to researchers in probability and geometry, and in the history of these subjects.

International Journal of Mathematical Modeling, Simulation and Applications Oct 26 2019

Tutorials on Emerging Methodologies and Applications in Operations Research Sep 17 2021 This volume reflects the theme of the INFORMS 2004 Meeting in Denver: Back to OR Roots. Emerging as a quantitative approach to problem-solving in World War II, our founders were physicists, mathematicians, and engineers who quickly found peace-time uses. It is fair to say that Operations Research (OR) was born in the same incubator as computer science, and it has spawned many new disciplines, such as systems engineering, health care management, and transportation science. Although people from many disciplines routinely use OR methods, many scientific researchers, engineers, and others do not understand basic OR tools and how they can help them. Disciplines ranging from finance to bioengineering are the beneficiaries of what we do — we take an interdisciplinary approach to problem-solving. Our strengths are modeling, analysis, and algorithm design. We provide a quantitative foundation for a broad spectrum of problems, from economics to medicine, from environmental control to sports, from e-commerce to computational - ometry. We are both producers and consumers because the mainstream of OR is in the interfaces. As part of this effort to recognize and extend OR roots in future problem-solving, we organized a set of tutorials designed for people who heard of the topic and want to decide whether to learn it. The 90 minutes was spent addressing the questions: What is this about, in a nutshell? Why is it important? Where can I learn more? In total, we had 14 tutorials, and eight of them are published here.