Journal Of Optimization

Engineering OptimizationOptimizationModeling and Optimization in Space EngineeringNonlinear Optimization and Related TopicsIssues in Calculus, Mathematical Analysis, and Nonlinear Research: 2012 EditionPursuit-Evasion Differential GamesOperations PlanningAlgorithms for OptimizationVariational Analysis and Set OptimizationHandbook of Optimization in Complex NetworksStochastic Modeling and OptimizationHandbook of Optimization in MedicineOptimization in Engineering SciencesAnalytics and Optimization for Renewable Energy IntegrationConjugate Duality and OptimizationInternational Journal of Energy Optimization and Engineering (IJEOE).Ordinal OptimizationJournal of Information & Optimization SciencesEvolutionary Computation for Modeling and OptimizationParameterized ComplexityRecent Advances in Optimization TechniquesHandbook of Research on Emergent Applications of Optimization AlgorithmsNew Optimization Techniques in EngineeringGuide to Structural OptimizationInformation Security and OptimizationAntibiotic OptimizationJournal of Optimization Theory and ApplicationsPerturbation Analysis of Optimization ProblemsCuckoo Search and Firefly AlgorithmMeta-Heuristics Optimization Algorithms in Engineering, Business, Economics, and FinanceVariable Neighborhood SearchTopological Optimization of BucklingCombinatorial Optimization and ApplicationsV-Invex Functions and Vector OptimizationOptimization for Machine

LearningStochastic Optimization in Continuous TimeModern Optimization Methods for Science, Engineering and TechnologyControl Applications of Nonlinear Programming and Optimization 1989Stochastic Global OptimizationHandbook of Optimization

Engineering Optimization

This volume presents a selection of advanced case studies that address a substantial range of issues and challenges arising in space engineering. The contributing authors are well-recognized researchers and practitioners in space engineering and in applied optimization. The key mathematical modeling and numerical solution aspects of each application case study are presented in sufficient detail. Classic and more recent space engineering problems – including cargo accommodation and object placement, flight control of satellites, integrated design and trajectory optimization, interplanetary transfers with deep space manoeuvres, low energy transfers, magnetic cleanliness modeling, propulsion system design, sensor system placement, systems engineering, space traffic logistics, and trajectory optimization – are discussed. Novel points of view related to computational global optimization and optimal control, and to multidisciplinary design optimization are also given proper emphasis. A particular attention is paid also to scenarios expected in the context of future interplanetary explorations. Modeling and Optimization in Space Engineering will benefit researchers and practitioners working on space

engineering applications. Academics, graduate and post-graduate students in the fields of aerospace and other engineering, applied mathematics, operations research and optimal control will also find the book useful, since it discusses a range of advanced model development and solution techniques and tools in the context of real-world applications and new challenges.

Optimization

A comprehensive introduction to optimization with a focus on practical algorithms for the design of engineering systems. This book offers a comprehensive introduction to optimization with a focus on practical algorithms. The book approaches optimization from an engineering perspective, where the objective is to design a system that optimizes a set of metrics subject to constraints. Readers will learn about computational approaches for a range of challenges, including searching high-dimensional spaces, handling problems where there are multiple competing objectives, and accommodating uncertainty in the metrics. Figures, examples, and exercises convey the intuition behind the mathematical approaches. The text provides concrete implementations in the Julia programming language. Topics covered include derivatives and their generalization to multiple dimensions; local descent and first- and second-order methods that inform local descent; stochastic methods, which introduce randomness into the optimization process; linear constrained optimization, when both the objective function and the constraints are linear; surrogate

models, probabilistic surrogate models, and using probabilistic surrogate models to guide optimization; optimization under uncertainty; uncertainty propagation; expression optimization; and multidisciplinary design optimization. Appendixes offer an introduction to the Julia language, test functions for evaluating algorithm performance, and mathematical concepts used in the derivation and analysis of the optimization methods discussed in the text. The book can be used by advanced undergraduates and graduate students in mathematics, statistics, computer science, any engineering field, (including electrical engineering and aerospace engineering), and operations research, and as a reference for professionals.

Modeling and Optimization in Space Engineering

This volume constitutes the post- conference proceedings of the 7th International Conference on Variable Neighborhood Search, ICVNS 2019, held in Rabat, Morocco, in October 2019. The 13 full papers presented in this volume were carefully reviewed and selected from 46 submissions. The papers describe recent advances in methods and applications of variable neighborhood search.

Nonlinear Optimization and Related Topics

This book focuses on topics ranging from the economics of drug-resistant infections and the

management of antimicrobial use to new information on methods to optimize the selection, route of administration, dosing, and duration of antimicrobial therapies for common infections. In addition to offering ideas on studied programmatic approaches for judi

Issues in Calculus, Mathematical Analysis, and Nonlinear Research: 2012 Edition

These Proceedings provide valuable information on the exchange of ideas between scientists who apply nonlinear programming and optimization to real world control problems and those who develop new methods, algorithms and software. The papers deal with windshear problems, optimization of aircraft and spacecraft trajectories, optimal control for robots, the optimization of urban traffic control, general mechanical systems, multilevel inventory systems and robust control.

Pursuit-Evasion Differential Games

First published in 2004, this is a rigorous but user-friendly book on the application of stochastic control theory to economics. A distinctive feature of the book is that mathematical concepts are introduced in a language and terminology familiar to graduate students of economics. The standard topics of many mathematics, economics and finance books are illustrated with real examples documented in the economic literature. Moreover, the book emphasises

the dos and don'ts of stochastic calculus, cautioning the reader that certain results and intuitions cherished by many economists do not extend to stochastic models. A special chapter (Chapter 5) is devoted to exploring various methods of finding a closed-form representation of the value function of a stochastic control problem, which is essential for ascertaining the optimal policy functions. The book also includes many practice exercises for the reader. Notes and suggested readings are provided at the end of each chapter for more references and possible extensions.

Operations Planning

Optimization methods are perceived to be at the heart of computer methods for designing engineering systems. With these optimization methods, the designer can evaluate more alternatives, resulting in a better and more cost-effective design. This guide describes the use of modern optimization methods with simple yet meaningful structural design examples. Optimum solutions are obtained and, where possible, compared with the solutions obtained using traditional design procedures.

Algorithms for Optimization

Twenty papers are devoted to the treatment of a wide spectrum of problems in the theory and applications of dynamic games with the emphasis on pursuit-evasion differential games. The problem of capturability is thoroughly investigated, also the

problem of noise-corrupted (state) measurements. Attention is given to aerial combat problems and their attendant modelling issues, such as variable speed of the combatants, the three-dimensionality of physical space, and the combat problem, i.e. problems related to 'role determination'.

Variational Analysis and Set Optimization

Performance evaluation of increasingly complex human-made systems requires the use of simulation models. However, these systems are difficult to describe and capture by succinct mathematical models. The purpose of this book is to address the difficulties of the optimization of complex systems via simulation models or other computation-intensive models involving possible stochastic effects and discrete choices. This book establishes distinct advantages of the "softer" ordinal approach for search-based type problems, analyzes its general properties, and shows the many orders of magnitude improvement in computational efficiency that is possible.

Handbook of Optimization in Complex Networks

An accessible introduction to metaheuristics and optimization, featuring powerful and modern algorithms for application across engineering and the sciences From engineering and computer science to economics and management science, optimization is

a core component for problem solving. Highlighting the latest developments that have evolved in recent years, Engineering Optimization: An Introduction with Metaheuristic Applications outlines popular metaheuristic algorithms and equips readers with the skills needed to apply these techniques to their own optimization problems. With insightful examples from various fields of study, the author highlights key concepts and techniques for the successful application of commonly-used metaheuristc algorithms, including simulated annealing, particle swarm optimization, harmony search, and genetic algorithms. The author introduces all major metaheuristic algorithms and their applications in optimization through a presentation that is organized into three succinct parts: Foundations of Optimization and Algorithms provides a brief introduction to the underlying nature of optimization and the common approaches to optimization problems, random number generation, the Monte Carlo method, and the Markov chain Monte Carlo method Metaheuristic Algorithms presents common metaheuristic algorithms in detail, including genetic algorithms, simulated annealing, ant algorithms, bee algorithms, particle swarm optimization, firefly algorithms, and harmony search Applications outlines a wide range of applications that use metaheuristic algorithms to solve challenging optimization problems with detailed implementation while also introducing various modifications used for multi-objective optimization Throughout the book, the author presents worked-out examples and real-world applications that illustrate the modern relevance of the topic. A detailed appendix features important and popular algorithms

using MATLAB® and Octave software packages, and a related FTP site houses MATLAB code and programs for easy implementation of the discussed techniques. In addition, references to the current literature enable readers to investigate individual algorithms and methods in greater detail. Engineering Optimization: An Introduction with Metaheuristic Applications is an excellent book for courses on optimization and computer simulation at the upper-undergraduate and graduate levels. It is also a valuable reference for researchers and practitioners working in the fields of mathematics, engineering, computer science, operations research, and management science who use metaheuristic algorithms to solve problems in their everyday work.

Stochastic Modeling and Optimization

Presently, general-purpose optimization techniques such as Simulated Annealing, and Genetic Algorithms, have become standard optimization techniques. Concerted research efforts have been made recently in order to invent novel optimization techniques for solving real life problems, which have the attributes of memory update and population-based search solutions. The book describes a variety of these novel optimization techniques which in most cases outperform the standard optimization techniques in many application areas. New Optimization Techniques in Engineering reports applications and results of the novel optimization techniques considering a multitude of practical problems in the different engineering disciplines – presenting both the background of the

subject area and the techniques for solving the problems.

Handbook of Optimization in Medicine

This book discusses the application of independent continuous mapping method in predicting and the optimization of the mechanical performance of buckling with displacement, stress and static constrains. Each model is explained by mathematical theories and followed by simulation with frequently-used softwares. With abundant project data, the book is an essential reference for mechanical engineers, structural engineers and industrial designers.

Optimization in Engineering Sciences

An approach to complexity theory which offers a means of analysing algorithms in terms of their tractability. The authors consider the problem in terms of parameterized languages and taking "k-slices" of the language, thus introducing readers to new classes of algorithms which may be analysed more precisely than was the case until now. The book is as self-contained as possible and includes a great deal of background material. As a result, computer scientists, mathematicians, and graduate students interested in the design and analysis of algorithms will find much of interest.

Analytics and Optimization for Renewable Energy Integration

Conjugate Duality and Optimization

The purpose of this book is to present the main metaheuristicsand approximate and stochastic methods for optimization of complexsystems in Engineering Sciences. It has been written within theframework of the European Union project ERRIC (Empowering RomanianResearch on Intelligent Information Technologies), which is fundedby the EU's FP7 Research Potential program and has beendeveloped in co-operation between French and Romanian teachingresearchers. Through the principles of various proposed algorithms(with additional references) this book allows the reader to explorevarious methods of implementation such as metaheuristics, localsearch and populationbased methods. It examines multi-objective andstochastic optimization, as well as methods and tools forcomputer-aided decision-making and simulation fordecision-making.

International Journal of Energy Optimization and Engineering (IJEOE).

This book deals with optimality conditions, algorithms, and discretization tech niques for nonlinear programming, semi-infinite optimization, and optimal con trol problems. The unifying thread in the presentation consists of an abstract theory, within which optimality conditions are expressed in the form of zeros of optimality junctions, algorithms are characterized by point-to-set iteration maps, and all the numerical approximations required in the solution

of semi-infinite optimization and optimal control problems are treated within the context of con sistent approximations and algorithm implementation techniques. Traditionally, necessary optimality conditions for optimization problems are presented in Lagrange, F. John, or Karush-Kuhn-Tucker multiplier forms, with gradients used for smooth problems and subgradients for nonsmooth prob lems. We present these classical optimality conditions and show that they are satisfied at a point if and only if this point is a zero of an upper semicontinuous optimality junction. The use of optimality functions has several advantages. First, optimality functions can be used in an abstract study of optimization algo rithms. Second, many optimization algorithms can be shown to use search directions that are obtained in evaluating optimality functions, thus establishing a clear relationship between optimality conditions and algorithms. Third, estab lishing optimality conditions for highly complex problems, such as optimal con trol problems with control and trajectory constraints, is much easier in terms of optimality functions than in the classical manner. In addition, the relationship between optimality conditions for finite-dimensional problems and semi-infinite optimization and optimal control problems becomes transparent.

Ordinal Optimization

A reference for those working at the interface of operations planning and optimization modeling, Operations Planning: Mixed Integer Optimization Models blends essential theory and powerful

approaches to practical operations planning problems. It presents a set of classical optimization models with widespread application in operations planning. The discussion of each of these classical models begins with the motivation for studying the problem as well as examples of the problem's application in operations planning contexts. The book explores special structural results and properties of optimal solutions that have led to effective algorithmic solution approaches for each problem class. Each of the models and solution methods presented is the result of high-impact research that has been published in the scholarly literature, with appropriate references cited throughout the book. The author highlights the close relationships among the models, examining those situations in which a particular model results as a special case of other related models or how one model generalizes another. Understanding these relationships allows you to more easily characterize new models being developed through their relationships to classical models. The models and methods presented in the book have widespread application in operations planning. It enables you to recognize the structural similarities between models and to recognize these structural elements within other contexts. It also gives you an understanding of various critical operations research techniques and classical operations planning models, without the need to consult numerous sources.

Journal of Information & Optimization Sciences

Optimization problems were and still are the focus of mathematics from antiquity to the present. Since the beginning of our civilization, the human race has had to confront numerous technological challenges, such as finding the optimal solution of various problems including control technologies, power sources construction, applications in economy, mechanical engineering and energy distribution amongst others. These examples encompass both ancient as well as modern technologies like the first electrical energy distribution network in USA etc. Some of the key principles formulated in the middle ages were done by Johannes Kepler (Problem of the wine barrels), Johan Bernoulli (brachystochrone problem), Leonhard Euler (Calculus of Variations), Lagrange (Principle multipliers), that were formulated primarily in the ancient world and are of a geometric nature. In the beginning of the modern era, works of L.V. Kantorovich and G.B. Dantzig (so-called linear programming) can be considered amongst others. This book discusses a wide spectrum of optimization methods from classical to modern, alike heuristics. Novel as well as classical techniques is also discussed in this book, including its mutual intersection. Together with many interesting chapters, a reader will also encounter various methods used for proposed optimization approaches, such as game theory and evolutionary algorithms or modelling of evolutionary algorithm dynamics like complex networks.

Evolutionary Computation for Modeling and Optimization

This book contains the latest advances in variational analysis and set / vector optimization, including uncertain optimization, optimal control and bilevel optimization. Recent developments concerning scalarization techniques, necessary and sufficient optimality conditions and duality statements are given. New numerical methods for efficiently solving set optimization problems are provided. Moreover, applications in economics, finance and risk theory are discussed. Summary The objective of this book is to present advances in different areas of variational analysis and set optimization, especially uncertain optimization, optimal control and bilevel optimization. Uncertain optimization problems will be approached from both a stochastic as well as a robust point of view. This leads to different interpretations of the solutions, which widens the choices for a decision-maker given his preferences. Recent developments regarding linear and nonlinear scalarization techniques with solid and nonsolid ordering cones for solving set optimization problems are discussed in this book. These results are useful for deriving optimality conditions for set and vector optimization problems. Consequently, necessary and sufficient optimality conditions are presented within this book, both in terms of scalarization as well as generalized derivatives. Moreover, an overview of existing duality statements and new duality assertions is given. The book also addresses the field of variable domination structures in vector and set optimization. Including variable ordering cones is especially important in applications such as medical image registration with uncertainties. This book covers a wide range of applications of set optimization. These range from

finance, investment, insurance, control theory, economics to risk theory. As uncertain multi-objective optimization, especially robust approaches, lead to set optimization, one main focus of this book is uncertain optimization. Important recent developments concerning numerical methods for solving set optimization problems sufficiently fast are main features of this book. These are illustrated by various examples as well as easy-to-follow-steps in order to facilitate the decision process for users. Simple techniques aimed at practitioners working in the fields of mathematical programming, finance and portfolio selection are presented. These will help in the decision-making process, as well as give an overview of nondominated solutions to choose from.

Parameterized Complexity

Modern optimization approaches have attracted an increasing number of scientists, decision makers, and researchers. As new issues in this field emerge, different optimization methodologies must be developed and implemented. The Handbook of Research on Emergent Applications of Optimization Algorithms is an authoritative reference source for the latest scholarly research on modern optimization techniques for solving complex problems of global optimization and their applications in economics and engineering. Featuring coverage on a broad range of topics and perspectives such as hybrid systems, non-cooperative games, and cryptography, this publication is ideally designed for students, researchers, and engineers interested in emerging

developments in optimization algorithms.

Recent Advances in Optimization Techniques

A presentation of general results for discussing local optimality and computation of the expansion of value function and approximate solution of optimization problems, followed by their application to various fields, from physics to economics. The book is thus an opportunity for popularizing these techniques among researchers involved in other sciences, including users of optimization in a wide sense, in mechanics, physics, statistics, finance and economics. Of use to research professionals, including graduate students at an advanced level.

Handbook of Research on Emergent Applications of Optimization Algorithms

Complex Social Networks is a newly emerging (hot) topic with applications in a variety of domains, such as communication networks, engineering networks, social networks, and biological networks. In the last decade, there has been an explosive growth of research on complex real-world networks, a theme that is becoming pervasive in many disciplines, ranging from mathematics and computer science to the social and biological sciences. Optimization of complex communication networks requires a deep understanding of the interplay between the dynamics of the physical network and the information dynamics within the network. Although there are a few books

addressing social networks or complex networks, none of them has specially focused on the optimization perspective of studying these networks. This book provides the basic theory of complex networks with several new mathematical approaches and optimization techniques to design and analyze dynamic complex networks. A wide range of applications and optimization problems derived from research areas such as cellular and molecular chemistry, operations research, brain physiology, epidemiology, and ecology.

New Optimization Techniques in Engineering

This book reviews the fundamentals, background and theoretical concepts of optimization principles in comprehensive manner along with their potentials applications and implementation strategies. The book will be very useful for wide spectrum of target readers such as research scholars, academia, and industry professionals.

Guide to Structural Optimization

This book examines the main methodological and theoretical developments in stochastic global optimization. It is designed to inspire readers to explore various stochastic methods of global optimization by clearly explaining the main methodological principles and features of the methods. Among the book's features is a comprehensive study of probabilistic and statistical

models underlying the stochastic optimization algorithms.

Information Security and Optimization

Antibiotic Optimization

Optimization techniques have developed into a significant area concerning industrial, economics, business, and financial systems. With the development of engineering and financial systems, modern optimization has played an important role in service-centered operations and as such has attracted more attention to this field. Meta-heuristic hybrid optimization is a newly development mathematical framework based optimization technique. Designed by logicians, engineers, analysts, and many more, this technique aims to study the complexity of algorithms and problems. Meta-Heuristics Optimization Algorithms in Engineering, Business, Economics, and Finance explores the emerging study of meta-heuristics optimization algorithms and methods and their role in innovated real world practical applications. This book is a collection of research on the areas of meta-heuristics optimization algorithms in engineering, business, economics, and finance and aims to be a comprehensive reference for decision makers, managers, engineers, researchers, scientists, financiers, and economists as well as industrialists.

Journal of Optimization Theory and Applications

The 4th Annual International Conference on Combinatorial Optimization and Applications (COCOA 2010) took place in Big Island, Hawaii, USA, December 18–20, 2010. Past COCOA conferences were held in Xi'an, China (2007), Newfoundland, Canada (2008)and Huangshan, China (2009). COCOA2010pro videdaforumforresearchersworkingintheareasofcom- natorial optimization and its applications. In addition to theoretical results, the conference also included recent works on experimental and applied research of general algorithmic interest. The Program Committee received 108 submissions from more than 23 countries and regions, including Australia, Austria, Canada, China, Denmark, France, Germany, Hong Kong, India, Italy, Japan, Korea, Mexico, New Zealand, Poland, Slovak Republic, Spain, Sweden, Switzerland, Taiwan, UK, USA, Vietnam, etc. Among the 108 submissions, 49 regular papers were selected for presentation at the conference and are included in this volume. Some of these papers will be selected for publication in a special issue of the Journal of Combinatorial Optimization, a special issue of Theoretical Computer Science, a special issue of Optimization Letters, and a special issue of Discrete Mathematics, Algorithms and Applications under the standard refereeing procedure.

Perturbation Analysis of Optimization Problems

Information Security and Optimization maintains a practical perspective while offering theoretical explanations. The book explores concepts that are

essential for academics as well as organizations. It discusses aspects of techniques and tools—definitions, usage, and analysis—that are invaluable for scholars ranging from those just beginning in the field to established experts. What are the policy standards? What are vulnerabilities and how can one patch them? How can data be transmitted securely? How can data in the cloud or cryptocurrency in the blockchain be secured? How can algorithms be optimized? These are some of the possible queries that are answered here effectively using examples from real life and case studies. Features: A wide range of case studies and examples derived from real-life scenarios that map theoretical explanations with real incidents. Descriptions of security tools related to digital forensics with their unique features, and the working steps for acquiring hands-on experience. Novel contributions in designing organization security policies and lightweight cryptography. Presentation of real-world use of blockchain technology and biometrics in cryptocurrency and personalized authentication systems. Discussion and analysis of security in the cloud that is important because of extensive use of cloud services to meet organizational and research demands such as data storage and computing requirements. Information Security and Optimization is equally helpful for undergraduate and postgraduate students as well as for researchers working in the domain. It can be recommended as a reference or textbook for courses related to cybersecurity.

Cuckoo Search and Firefly Algorithm

This volume contains the edited texts of the lectures presented at the Workshop on Nonlinear Optimization held in Erice, Sicily, at the "G. Stampacchia" School of Mathematics of the "E. Majorana" Centre for Scientific Culture, June 23 -July 2, 1998. In the tradition of these meetings, the main purpose was to review and discuss recent advances and promising research trends concerning theory, algorithms and innovative applications in the field of Nonlinear Optimization, and of related topics such as Convex Optimization, Nonsmooth Optimization, Variational Inequalities and Complementarity Problems. The meeting was attended by 83 people from 21 countries. Besides the lectures, several formal and informal discussions took place. The result was a wide and deep knowledge of the present research tendencies in the field. We wish to express our appreciation for the active contribution of all the par ticipants in the meeting. Our gratitude is due to the Ettore Majorana Centre in Erice, which offered its facilities and rewarding environment: its staff was certainly instrumental for the success of the meeting. Our gratitude is also due to Francisco Facchinei and Massimo Roma for the effort and time devoted as members of the Organising Committee. We are indebted to the Italian National Research Council, and in particular to the Group on Functional Analysis and its Applications and to the Committees on Engineering Sciences and on Information Sciences and Technolo gies for their financial support. Finally, we address our thanks to Kluwer Academic Publishers for having offered to publish this volume.

Meta-Heuristics Optimization Algorithms

in Engineering, Business, Economics, and Finance

The scope of this book covers the modeling and forecast of renewable energy and operation and planning of power system with renewable energy integration.The first part presents mathematical theories of stochastic mathematics; the second presents modeling and analytic techniques for renewable energy generation; the third provides solutions on how to handle the uncertainty of renewable energy in power system operation. It includes advanced stochastic unit commitment models to acquire the optimal generation schedule under uncertainty, efficient algorithms to calculate the probabilistic power, and an efficient operation strategy for renewable power plants participating in electricity markets.

Variable Neighborhood Search

Topological Optimization of Buckling

This books covers the broad range of research in stochastic models and optimization. Applications presented include networks, financial engineering, production planning, and supply chain management. Each contribution is aimed at graduate students working in operations research, probability, and statistics.

Combinatorial Optimization and

Applications

An up-to-date account of the interplay between
optimization and machine learning, accessible to
students and researchers in both communities. The
interplay between optimization and machine learning
is one of the most important developments in modern
computational science. Optimization formulations and
methods are proving to be vital in designing
algorithms to extract essential knowledge from huge
volumes of data. Machine learning, however, is not
simply a consumer of optimization technology but a
rapidly evolving field that is itself generating new
optimization ideas. This book captures the state of the
art of the interaction between optimization and
machine learning in a way that is accessible to
researchers in both fields. Optimization approaches
have enjoyed prominence in machine learning
because of their wide applicability and attractive
theoretical properties. The increasing complexity,
size, and variety of today's machine learning models
call for the reassessment of existing assumptions.
This book starts the process of reassessment. It
describes the resurgence in novel contexts of
established frameworks such as first-order methods,
stochastic approximations, convex relaxations,
interior-point methods, and proximal methods. It also
devotes attention to newer themes such as
regularized optimization, robust optimization,
gradient and subgradient methods, splitting
techniques, and second-order methods. Many of these
techniques draw inspiration from other fields,
including operations research, theoretical computer

science, and subfields of optimization. The book will enrich the ongoing cross-fertilization between the machine learning community and these other fields, and within the broader optimization community.

V-Invex Functions and Vector Optimization

Provides a relatively brief introduction to conjugate duality in both finite- and infinite-dimensional problems. An emphasis is placed on the fundamental importance of the concepts of Lagrangian function, saddle-point, and saddle-value. General examples are drawn from nonlinear programming, approximation, stochastic programming, the calculus of variations, and optimal control.

Optimization for Machine Learning

Stochastic Optimization in Continuous Time

This volume summarizes and synthesizes an aspect of research work that has been done in the area of Generalized Convexity over the past few decades. Specifically, the book focuses on V-invex functions in vector optimization that have grown out of the work of Jeyakumar and Mond in the 1990's. The authors integrate related research into the book and demonstrate the wide context from which the area has grown and continues to grow.

Modern Optimization Methods for Science, Engineering and Technology

Handbook of Optimization in Medicine is devoted to examining the dramatic increase in the application of effective optimization techniques to the delivery of health care. The articles, written by experts, focus on models and algorithms that have led to more efficient and sophisticated treatments of patients. Topics covered include: optimization in medical imaging, classification and data mining with medical applications, treatment of epilepsy and other brain disorders, treatment of head-and-neck, prostate, and other cancers using conventional conformal and intensity-modulated radiation therapy as well as proton therapy, treatment selection for breast cancer based on new classification schemes, optimization for the genome project, optimal timing of organ transplants.

Control Applications of Nonlinear Programming and Optimization 1989

Nature-inspired algorithms such as cuckoo search and firefly algorithm have become popular and widely used in recent years in many applications. These algorithms are flexible, efficient and easy to implement. New progress has been made in the last few years, and it is timely to summarize the latest developments of cuckoo search and firefly algorithm and their diverse applications. This book will review both theoretical studies and applications with detailed algorithm analysis, implementation and case studies

so that readers can benefit most from this book. Application topics are contributed by many leading experts in the field. Topics include cuckoo search, firefly algorithm, algorithm analysis, feature selection, image processing, travelling salesman problem, neural network, GPU optimization, scheduling, queuing, multi-objective manufacturing optimization, semantic web service, shape optimization, and others. This book can serve as an ideal reference for both graduates and researchers in computer science, evolutionary computing, machine learning, computational intelligence, and optimization, as well as engineers in business intelligence, knowledge management and information technology.

Stochastic Global Optimization

Concentrates on developing intuition about evolutionary computation and problem solving skills and tool sets. Lots of applications and test problems, including a biotechnology chapter.

Handbook of Optimization

Issues in Calculus, Mathematical Analysis, and Nonlinear Research: 2012 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Nonlinear Research. The editors have built Issues in Calculus, Mathematical Analysis, and Nonlinear Research: 2012 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Nonlinear Research in this eBook to

be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Calculus, Mathematical Analysis, and Nonlinear Research: 2012 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/.

ROMANCE ACTION & ADVENTURE MYSTERY & THRILLER BIOGRAPHIES & HISTORY CHILDREN'S YOUNG ADULT FANTASY HISTORICAL FICTION HORROR LITERARY FICTION NON-FICTION SCIENCE FICTION