Optimization Techniques in Statistics (Statistical Modeling and Decision Science)

By Jagdish S. Rustagi

Optimization Techniques in Statistics (Statistical Modeling and Decision Science) By Jagdish S. Rustagi

Statistics help guide us to optimal decisions under uncertainty. A large variety of statistical problems are essentially solutions to optimization problems. The mathematical techniques of optimization are fundamentalto statistical theory and practice. In this book, Jagdish Rustagi provides full-spectrum coverage of these methods, ranging from classical optimization and Lagrange multipliers, to numerical techniques using gradients or direct search, to linear, nonlinear, and dynamic programming using the Kuhn-Tucker conditions or the Pontryagin maximal principle. Variational methods and optimization in function spaces are also discussed, as are stochastic optimization in simulation, including annealing methods.

The text features numerous applications, including:

Finding maximum likelihood estimates

Markov decision processes

Programming methods used to optimize monitoring of patients in hospitals

Derivation of the Neyman-Pearson lemma

The search for optimal designs

Simulation of a steel mill

Suitable as both a reference and a text, this book will be of interest to advanced undergraduate or beginning graduate students in statistics, operations research, management and engineering sciences, and related fields. Most of the material can be covered in one semester by students with a basic background in probability and statistics.

Key Features

* Covers optimization from traditional methods to recent developments such as Karmarkars algorithm and simulated annealing

* Develops a wide range of statistical techniques in the unified context of optimization

* Discusses applications such as optimizing monitoring of patients and simulating steel mill operations

* Treats numerical methods and applications

Includes exercises and references for each chapter

* Covers topics such as linear, nonlinear, and dynamic programming, variational

methods, and stochastic optimization

Optimization Techniques in Statistics (Statistical Modeling and Decision Science)

By Jagdish S. Rustagi

Optimization Techniques in Statistics (Statistical Modeling and Decision Science) By Jagdish S. Rustagi

Statistics help guide us to optimal decisions under uncertainty. A large variety of statistical problems are essentially solutions to optimization problems. The mathematical techniques of optimization are fundamentalto statistical theory and practice. In this book, Jagdish Rustagi provides full-spectrum coverage of these methods, ranging from classical optimization and Lagrange multipliers, to numerical techniques using gradients or direct search, to linear, nonlinear, and dynamic programming using the Kuhn-Tucker conditions or the Pontryagin maximal principle. Variational methods and optimization in function spaces are also discussed, as are stochastic optimization in simulation, including annealing methods.
The text features numerous applications, including:
Finding maximum likelihood estimates
Markov decision processes
Programming methods used to optimize monitoring of patients in hospitals
Derivation of the Neyman-Pearson lemma
The search for optimal designs
Simulation of a steel mill
Suitable as both a reference and a text, this book will be of interest to advanced undergraduate or beginning graduate students in statistics, operations research, management and engineering sciences, and related fields. Most of the material can be covered in one semester by students with a basic background in probability and statistics.

Key Features
* Covers optimization from traditional methods to recent developments such as Karmarkars algorithm and simulated annealing
* Develops a wide range of statistical techniques in the unified context of optimization
* Discusses applications such as optimizing monitoring of patients and simulating steel mill operations
* Treats numerical methods and applications
Includes exercises and references for each chapter
* Covers topics such as linear, nonlinear, and dynamic programming, variational methods, and stochastic optimization

Optimization Techniques in Statistics (Statistical Modeling and Decision Science) By Jagdish S. Rustagi Bibliography

- Rank: #6090717 in Books
- Published on: 1994-05-09
- Original language: English
- Number of items: 1
- Dimensions: .89" h x 6.20" w x 9.29" l,
- Binding: Hardcover

- 359 pages

Download and Read Free Online Optimization Techniques in Statistics (Statistical Modeling and Decision Science) By Jagdish S. Rustagi

Editorial Review

Review
It is well written, nicely organized, with a high degree of mathematical accuracy...all coming together to make the material easily digestible.
--Stergios B. Fotopoulos, Washington State University
I enjoyed reading this book and strongly recommend it for its contribution to the field of statistics. I believe that it will have a positive impact on the content of optimization courses taught in both management and mathematical graduate programs.
--Stergios B. Fotopoulos, Washington State University

Users Review

From reader reviews:

Derrick Robertson:

The book Optimization Techniques in Statistics (Statistical Modeling and Decision Science) make one feel enjoy for your spare time. You can utilize to make your capable far more increase. Book can to be your best friend when you getting tension or having big problem with the subject. If you can make reading a book Optimization Techniques in Statistics (Statistical Modeling and Decision Science) being your habit, you can get a lot more advantages, like add your own personal capable, increase your knowledge about many or all subjects. It is possible to know everything if you like open and read a book Optimization Techniques in Statistics (Statistical Modeling and Decision Science). Kinds of book are a lot of. It means that, science publication or encyclopedia or some others. So , how do you think about this publication?

Gregory Howard:

This Optimization Techniques in Statistics (Statistical Modeling and Decision Science) usually are reliable for you who want to become a successful person, why. The key reason why of this Optimization Techniques in Statistics (Statistical Modeling and Decision Science) can be one of many great books you must have is definitely giving you more than just simple reading food but feed an individual with information that possibly will shock your preceding knowledge. This book is usually handy, you can bring it everywhere you go and whenever your conditions both in e-book and printed people. Beside that this Optimization Techniques in Statistics (Statistical Modeling and Decision Science) giving you an enormous of experience including rich vocabulary, giving you test of critical thinking that we all know it useful in your day task. So , let's have it appreciate reading.

Alan Malbrough:

Does one one of the book lovers? If so, do you ever feeling doubt when you find yourself in the book store? Attempt to pick one book that you just dont know the inside because don't evaluate book by its handle may doesn't work the following is difficult job because you are afraid that the inside maybe not seeing that

fantastic as in the outside search likes. Maybe you answer is usually Optimization Techniques in Statistics (Statistical Modeling and Decision Science) why because the excellent cover that make you consider about the content will not disappoint you actually. The inside or content is actually fantastic as the outside or perhaps cover. Your reading 6th sense will directly guide you to pick up this book.

Wm Dunlap:

The book untitled Optimization Techniques in Statistics (Statistical Modeling and Decision Science) contain a lot of information on it. The writer explains the girl idea with easy means. The language is very simple to implement all the people, so do not really worry, you can easy to read that. The book was authored by famous author. The author will bring you in the new era of literary works. You can actually read this book because you can read more your smart phone, or model, so you can read the book within anywhere and anytime. If you want to buy the e-book, you can start their official web-site along with order it. Have a nice study.

Download and Read Online Optimization Techniques in Statistics (Statistical Modeling and Decision Science) By Jagdish S. Rustagi #AM0DSPJKVO9

Read Optimization Techniques in Statistics (Statistical Modeling and Decision Science) By Jagdish S. Rustagi for online ebook

Optimization Techniques in Statistics (Statistical Modeling and Decision Science) By Jagdish S. Rustagi Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Optimization Techniques in Statistics (Statistical Modeling and Decision Science) By Jagdish S. Rustagi books to read online.

Online Optimization Techniques in Statistics (Statistical Modeling and Decision Science) By Jagdish S. Rustagi ebook PDF download

Optimization Techniques in Statistics (Statistical Modeling and Decision Science) By Jagdish S. Rustagi Doc

Optimization Techniques in Statistics (Statistical Modeling and Decision Science) By Jagdish S. Rustagi Mobipocket

Optimization Techniques in Statistics (Statistical Modeling and Decision Science) By Jagdish S. Rustagi EPub