Portfolio Management With Heuristic Optimization Author Dietmar Maringer Dec 2005

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Managerial and Organizational Cognition Colin Eden 1998-03-19 Interest in the field of managerial and organizational cognition has been intense over the last few years. This book explores and provides an in-depth overview of the latest developments in the area and presents answers to the questions accompanying its growth: Is the field distinctive? How does it extend our understanding of managerial processes? From different disciplinary perspectives and empirical settings, the contributors study patterns of managerial cognition. In particular, the longitudinal approach reflected in the volume contributes to its impact as a grounded, practice-based analysis of cognition in organizations. Handbook on Hedonic Indexes and Quality Adjustments in Price Indexes Special Application to Information Technology Products Triplett Jack 2006-09-21 Price

indexes can be constructed using a "hedonic method" that adjusts for changes in the quality of a product. This handbook sets out best practice for constructing hedonic indexes.

Recommender Systems Handbook Francesco Ricci 2015-11-17 This second edition of a well-received text, with 20 new chapters, presents a coherent and unified repository of recommender systems' major concepts, theories, methodologies, trends, and challenges. A variety of real-world applications and detailed case studies are included. In addition to wholesale revision of the existing chapters, this edition includes new topics including: decision making and recommender systems, reciprocal recommender systems, recommender systems in social networks, mobile recommender systems, explanations for recommender systems, music recommender systems, cross-domain recommendations, privacy in

recommender systems, and semantic-based recommender systems. This multi-disciplinary handbook involves world-wide experts from diverse fields such as artificial intelligence, human-computer interaction, information retrieval, data mining, mathematics, statistics, adaptive user interfaces, decision support systems, psychology, marketing, and consumer behavior. Theoreticians and practitioners from these fields will find this reference to be an invaluable source of ideas, methods and techniques for developing more efficient, cost-effective and accurate recommender systems.
Group-based Cryptography Alexei Myasnikov 2008-11-04 Covering relations between three different areas of mathematics and theoretical computer science, this book explores how non-commutative (infinite) groups, which are typically studied in combinatorial group theory, can be used in public key cryptography.
Financial Modeling Joachim Häcker 2017-12-11 This book provides a comprehensive introduction to modern financial modeling using Excel, VBA, standards of financial modeling and model review. It offers guidance on essential modeling concepts around the four core financial activities in the modern financial industry today: financial management; corporate finance; portfolio management and financial derivatives. Written in a highly practical, market focused manner, it gives step-by-step guidance on modeling practical problems in a structured manner. Quick and interactive learning is assured due to the structure as a training course which includes applied examples that are easy to follow. All applied examples contained in the book can be reproduced step by step with the help of the Excel files. The content of this book serves as the foundation for the training course Certified Financial Modeler. In an industry that is becoming increasingly complex, financial modeling is a key skill for practitioners across all key sectors of finance and banking, where complicated problems often need to be solved quickly and clearly. This book will equip readers with the basic modeling skills required across the industry today.
Towards Sustainable Innovation Sven Pastoors 2017-03-13 With sustainability having gained a lot of momentum over the last years and companies implementing strategies to create corporate sustainability, there are lots of opportunities for innovation. Thus, the two concepts of sustainability and innovation should not be considered separately – they are closely interlinked with one another. The main goal of sustainable innovation is to develop new products and technologies that have a positive impact on the company's triple-bottom-line. To meet this aim, they have to be ecologically and economically beneficial as well as socially balanced. In order to help companies to improve their sustainable innovation process practically, this book is structured into five possible phases of a sustainable innovation process: Awareness of a sustainability problem, Identification & Definition of the problem, Ideation & Evaluation of the solutions, Testing & Enrichment of the solutions, Implementation of the solutions & Green Marketing.
Hagenberg Research Bruno Buchberger 2009-05-29 BrunoBuchberger This book is a synopsis of basic and applied research done at the various re search institutions of the Softwarepark Hagenberg in Austria. Starting with 15 coworkers in my Research Institute for Symbolic Computation (RISC), I initiated the Softwarepark Hagenberg in 1987 on request of the Upper Aus trian Government with the objective of creating a

scienti?c, technological, and economic impulse for the region and the international community. In the meantime, in a joint e?ort, the Softwarepark Hagenberg has grown to the current (2009) size of over 1000 R&D employees and 1300 students in six research institutions, 40 companies and 20 academic study programs on the bachelor, master's and PhD level. The goal of the Softwarepark Hagenberg is innovation of economy in one of the most important current technologies: software. It is the message of this book that this can only be achieved and guaranteed long term by "watering the root", namely emphasis on research, both basic and applied. In this book, we summarize what has been achieved in terms of research in the various research institutions in the Softwarepark Hagenberg and what research vision we have for the imminent future. When I founded the Softwarepark Hagenberg, in addition to the "watering the root" principle, I had the vision that such a technology park can only prosper if we realize the "magic triangle", i.e. the close interaction of research, academic education, and business applications at one site, see Figure 1.

Metaheuristics in the Service Industry Martin Josef Geiger 2009-05-30 Most developed economics show the tendency of an increasing importance of modern services such as tourism, logistical services, finance, and others. In many cases, complex optimization problems can be found in this context, and the successful operation of modern services often depends on the ability to solve the obtained optimization models. Metaheuristics on the other hand present an interesting problem-resolution paradigm that has attracted considerable interest in past years. The book combines a set of selected and peer-reviewed articles, presenting novel results of metaheuristics for modern services. In particular, applications in the area of transportation and logistics are considered, while other areas include production and financial services. Novel methodological approaches as well as improved results are obtained, resulting in a considerable contribution to the state-of-the-art of research in metaheuristics.

Advances in Knowledge Discovery and Management Fabrice Guillet 2010-06-11 During the last decade, the French-speaking scientific community developed a very strong research activity in the field of Knowledge Discovery and Management (KDM or EGC for "Extraction et Gestion des Connaissances" in French), which is concerned with, among others, Data Mining, Knowledge Discovery, Business Intelligence, Knowledge Engineering and SemanticWeb. The recent and novel research contributions collected in this book are extended and reworked versions of a selection of the best papers that were originally presented in French at the EGC 2009 Conference held in Strasbourg, France on January 2009. The volume is organized in four parts. Part I includes five papers concerned by various aspects of supervised learning or information retrieval. Part II presents five papers concerned with unsupervised learning issues. Part III includes two papers on data streaming and two on security while in Part IV the last four papers are concerned with ontologies and semantic.

Numerical Methods and Optimization in Finance Manfred Gilli 2019-08-16 Computationally-intensive tools play an increasingly important role in financial decisions. Many financial problems—ranging from asset allocation to risk management and from option pricing to model calibration—can be efficiently handled using modern computational techniques. Numerical Methods and

Optimization in Finance presents such computational techniques, with an emphasis on simulation and optimization, particularly so-called heuristics. This book treats quantitative analysis as an essentially computational discipline in which applications are put into software form and tested empirically. This revised edition includes two new chapters, a self-contained tutorial on implementing and using heuristics, and an explanation of software used for testing portfolio-selection models. Postgraduate students, researchers in programs on quantitative and computational finance, and practitioners in banks and other financial companies can benefit from this second edition of Numerical Methods and Optimization in Finance. Introduces numerical methods to readers with economics backgrounds Emphasizes core simulation and optimization problems Includes MATLAB and R code for all applications, with sample code in the text and freely available for download

R For Dummies Andrie de Vries 2012-06-06 Master the programming language of choice among statisticians and data analysts worldwide Coming to grips with R can be tough, even for seasoned statisticians and data analysts. Enter R For Dummies, the quick, easy way to master all the R you'll ever need. Requiring no prior programming experience and packed with practical examples, easy, step-by-step exercises, and sample code, this extremely accessible guide is the ideal introduction to R for complete beginners. It also covers many concepts that intermediate-level programmers will find extremely useful. Master your R ABCs ? get up to speed in no time with the basics, from installing and configuring R to writing simple scripts and performing simultaneous calculations on many variables Put data in its place ? get to know your way around lists, data frames, and other R data structures while learning to interact with other programs, such as Microsoft Excel Make data dance to your tune ? learn how to reshape and manipulate data, merge data sets, split and combine data, perform calculations on vectors and arrays, and much more Visualize it ? learn to use R's powerful data visualization features to create beautiful and informative graphical presentations of your data Get statistical ? find out how to do simple statistical analysis, summarize your variables, and conduct classic statistical tests, such as t-tests Expand and customize R ? get the lowdown on how to find, install, and make the most of add-on packages created by the global R community for a wide variety of purposes Open the book and find: Help downloading, installing, and configuring R Tips for getting data in and out of R Ways to use data frames and lists to organize data How to manipulate and process data Advice on fitting regression models and ANOVA Helpful hints for working with graphics How to code in R What R mailing lists and forums can do for you *Guide to Advanced Empirical Software Engineering* Forrest Shull 2007-11-21 This book gathers chapters from some of the top international empirical software engineering researchers focusing on the practical knowledge necessary for conducting, reporting and using empirical methods in software engineering. Topics and features include guidance on how to design, conduct and report empirical studies. The volume also provides information across a range of techniques, methods and qualitative and quantitative issues to help build a toolkit applicable to the diverse software development contexts *The Constitution of Algorithms* Florian Jaton 2021-04-27 A laboratory study that investigates how algorithms come into existence. Algorithms--often associated with the

terms big data, machine learning, or artificial intelligence--underlie the technologies we use every day, and disputes over the consequences, actual or potential, of new algorithms arise regularly. In this book, Florian Jaton offers a new way to study computerized methods, providing an account of where algorithms come from and how they are constituted, investigating the practical activities by which algorithms are progressively assembled rather than what they may suggest or require once they are assembled.

Computational Management Science Raquel J. Fonseca 2015-12-22 This volume contains contributions from the 11th International Conference on Management Science (CMS 2014), held at Lisbon, Portugal, on May 29-31, 2014. Its contents reflect the wide scope of Management Science, covering different theoretical aspects for a quite diverse set of applications. Computational Management Science provides a unique perspective in relevant decision-making processes by focusing on all its computational aspects. These include computational economics, finance and statistics; energy; scheduling; supply chains; design, analysis and applications of optimization algorithms; deterministic, dynamic, stochastic, robust and combinatorial optimization models; solution algorithms, learning and forecasting such as neural networks and genetic algorithms; models and tools of knowledge acquisition, such as data mining; and all other topics in management science with the emphasis on computational paradigms.

Natural Computing in Computational Finance Anthony Brabazon 2010-06-09 The chapters in this book illustrate the application of a range of cutting-edge natural computing and agent-based methodologies in computational finance and economics. The eleven chapters were selected following a rigorous, peer-reviewed, selection process.

Supply Chain Management Based on SAP Systems Gerhard F. Knolmayer 2009-02-11 Since SAP is emphasizing recent developments in operations management in its SCM initiative, this book describes the methodological background from the viewpoint of a company using SAP systems. It describes order processing both in an intra- and interorganizational perspective, as well as future developments and system enhancements.

21st Century Sports Sascha L. Schmidt 2020-09-12 This book outlines the effects that technology-induced change will have on sport within the next five to ten years, and provides food for thought concerning what lies further ahead. Presented as a collection of essays, the authors are leading academics from renowned institutions such as Massachusetts Institute of Technology, Queensland University of Technology, and the University of Cambridge, and practitioners with extensive technological expertise. In their essays, the authors examine the impacts of emerging technologies like artificial intelligence, the Internet of Things, and robotics on sports and assess how they will change sport itself, consumer behavior, and existing business models. The book will help athletes, entrepreneurs, and innovators working in the sports industry to spot trendsetting technologies, gain deeper insights into how they will affect their activities, and identify the most effective responses to stay ahead of the competition both on and off the pitch.

Collaborative Recommendations: Algorithms, Practical Challenges And Applications Shlomo Berkovsky 2018-11-30 Recommender systems are very popular nowadays, as both an academic research field and services provided by numerous companies for e-commerce, multimedia and Web

content. Collaborative-based methods have been the focus of recommender systems research for more than two decades.The unique feature of the compendium is the technical details of collaborative recommenders. The book chapters include algorithm implementations, elaborate on practical issues faced when deploying these algorithms in large-scale systems, describe various optimizations and decisions made, and list parameters of the algorithms.This must-have title is a useful reference materials for researchers, IT professionals and those keen to incorporate recommendation technologies into their systems and services.

New Developments in the Theory of Networks Mika Tuunanen 2011-01-12 The theory of networks aims at developing theoretical views on the design and management of alliances, franchise chains, licensing, joint ventures, cooperatives, and venture capital relations. The current trend in economics and management of networks is twofold: First there is a strong tendency toward application of theoretical approaches developed both in organizational economics, strategic management and organization theory. The second trend refers to the development of more integrative views on networks. Especially, combining organizational economics, strategic management and relational views on networks are very promising research directions. Starting from this status of research, the current book emphasizes network research as a theory-driven field by offering new perspectives on contract design, decision and ownership rights, value creation, knowledge management and the role of social capital in franchising networks, alliances and cooperatives.

Effective Management Dietmar Sternad 2019-10-30 This brand new textbook has been designed to help your students to acquire or enhance their abilities in leading and developing themselves, others, and organizations. Grounded in the findings of both classic and recent management and leadership research, it translates the theory into rigorous yet practical advice so that students will have the skills to manage effectively and sustainably. The book takes an innovative learner-centric approach, structured around different levels of management from individual effectiveness, through to interpersonal effectiveness, and then team and organizational effectiveness. With a global focus, lively writing style, and an eye on current and future developments, it provides a succinct, accessible, and engaging look at what it means to be a manager. Thanks to its extensive features from thought-provoking questions to global case studies, this textbook will provide you with all the necessary tools to run an introductory management course which prepares students for the managerial challenges of the 21st century. Accompanying online resources for this title can be found at bloomsburyonlineresources.com/effective-management. These resources are designed to support teaching and learning when using this textbook and are available at no extra cost.

Optimization Methods Applied to Power Systems Francisco G. Montoya 2019-07-26 This book presents an interesting sample of the latest advances in optimization techniques applied to electrical power engineering. It covers a variety of topics from various fields, ranging from classical optimization such as Linear and Nonlinear Programming and Integer and Mixed-Integer Programming to the most modern methods based on bio-inspired metaheuristics. The featured papers invite readers to delve further into emerging optimization techniques and

their real application to case studies such as conventional and renewable energy generation, distributed generation, transport and distribution of electrical energy, electrical machines and power electronics, network optimization, intelligent systems, advances in electric mobility, etc.

Radical Technologies Adam Greenfield 2017-06-13 A field manual to the technologies that are transforming our lives Everywhere we turn, a startling new device promises to transfigure our lives. But at what cost? In this urgent and revelatory excavation of our Information Age, leading technology thinker Adam Greenfield forces us to reconsider our relationship with the networked objects, services and spaces that define us. It is time to re-evaluate the Silicon Valley consensus determining the future. We already depend on the smartphone to navigate every aspect of our existence. We're told that innovations—from augmented-reality interfaces and virtual assistants to autonomous delivery drones and self-driving cars—will make life easier, more convenient and more productive. 3D printing promises unprecedented control over the form and distribution of matter, while the blockchain stands to revolutionize everything from the recording and exchange of value to the way we organize the mundane realities of the day to day. And, all the while, fiendishly complex algorithms are operating quietly in the background, reshaping the economy, transforming the fundamental terms of our politics and even redefining what it means to be human. Having successfully colonized everyday life, these radical technologies are now conditioning the choices available to us in the years to come. How do they work? What challenges do they present to us, as individuals and societies? Who benefits from their adoption? In answering these questions, Greenfield's timely guide clarifies the scale and nature of the crisis we now confront —and offers ways to reclaim our stake in the future.

Data Feminism Catherine D'Ignazio 2020-03-31 A new way of thinking about data science and data ethics that is informed by the ideas of intersectional feminism. Today, data science is a form of power. It has been used to expose injustice, improve health outcomes, and topple governments. But it has also been used to discriminate, police, and surveil. This potential for good, on the one hand, and harm, on the other, makes it essential to ask: Data science by whom? Data science for whom? Data science with whose interests in mind? The narratives around big data and data science are overwhelmingly white, male, and techno-heroic. In Data Feminism, Catherine D'Ignazio and Lauren Klein present a new way of thinking about data science and data ethics—one that is informed by intersectional feminist thought. Illustrating data feminism in action, D'Ignazio and Klein show how challenges to the male/female binary can help challenge other hierarchical (and empirically wrong) classification systems. They explain how, for example, an understanding of emotion can expand our ideas about effective data visualization, and how the concept of invisible labor can expose the significant human efforts required by our automated systems. And they show why the data never, ever "speak for themselves." Data Feminism offers strategies for data scientists seeking to learn how feminism can help them work toward justice, and for feminists who want to focus their efforts on the growing field of data science. But Data Feminism is about much more than gender. It is about power, about who has it and who doesn't, and about

how those differentials of power can be challenged and changed.

Mathematics Under the Microscope Alexandre Borovik 2010 The author's goal is to start a dialogue between mathematicians and cognitive scientists. He discusses, from a working mathematician's point of view, the mystery of mathematical intuition: why are certain mathematical concepts more intuitive than others? To what extent does the ``small scale'' structure of mathematical concepts and algorithms reflect the workings of the human brain? What are the ``elementary particles'' of mathematics that build up the mathematical universe? The book is saturated with amusing examples from a wide range of disciplines--from turbulence to error-correcting codes to logic--as well as with just puzzles and brainteasers. Despite the very serious subject matter, the author's approach is lighthearted and entertaining. This is an unusual and unusually fascinating book. Readers who never thought about mathematics after their school years will be amazed to discover how many habits of mind, ideas, and even material objects that are inherently mathematical serve as building blocks of our civilization and everyday life. A professional mathematician, reluctantly breaking the daily routine, or pondering on some resisting problem, will open this book and enjoy a sudden return to his or her young days when mathematics was fresh, exciting, and holding all promises. And do not take the word ``microscope'' in the title too literally: in fact, the author looks around, in time and space, focusing in turn on a tremendous variety of motives, from mathematical ``memes'' (genes of culture) to an unusual life of a Hollywood star. --Yuri I. Manin, Max-Planck Institute of Mathematics, Bonn, and

Northwestern University
Engineering and Deployment of Cooperative Information Systems Yanbo Han 2014-01-15
Declarative Programming and Knowledge Management Petra Hofstedt 2020-05-05 This book constitutes revised selected papers from the 22nd International Conference on Applications of Declarative Programming and Knowledge Management, INAP 2019, the 33rd Workshop on Logic Programming, WLP 2019, and the 27th Workshop on Functional and (Constraint) Logic Programming, WFLP 2019. The 15 full papers and 1 short paper presented in this volume were carefully reviewed and selected from 24 submissions. The contributions present current research activities in the areas of declarative languages and compilation techniques, in particular for constraint-based, logical and functional languages and their extensions, as well as discuss new approaches and key findings in constraint-solving, knowledge representation, and reasoning techniques.
Waste Is Information Dietmar Offenhuber 2017-10-06 The relationship between infrastructure governance and the ways we read and represent waste systems, examined through three waste tracking and participatory sensing projects. Waste is material information. Landfills are detailed records of everyday consumption and behavior; much of what we know about the distant past we know from discarded objects unearthed by archaeologists and interpreted by historians. And yet the systems and infrastructures that process our waste often remain opaque. In this book, Dietmar Offenhuber examines waste from the perspective of information, considering emerging practices and technologies for making waste systems legible and how the resulting datasets and visualizations shape infrastructure governance. He does

so by looking at three waste tracking and participatory sensing projects in Seattle, São Paulo, and Boston. Offenhuber expands the notion of urban legibility—the idea that the city can be read like a text—to introduce the concept of infrastructure legibility. He argues that infrastructure governance is enacted through representations of the infrastructural system, and that these representations stem from the different stakeholders' interests, which drive their efforts to make the system legible. The Trash Track project in Seattle used sensor technology to map discarded items through the waste and recycling systems; the Forager project looked at the informal organization processes of waste pickers working for Brazilian recycling cooperatives; and mobile systems designed by the city of Boston allowed residents to report such infrastructure failures as potholes and garbage spills. Through these case studies, Offenhuber outlines an emerging paradigm of infrastructure governance based on a complex negotiation among users, technology, and the city.

Mathematical Reviews 2004

Natural Computing in Computational Finance Anthony Brabazon 2010-07-11 The chapters in this book illustrate the application of a range of cutting-edge natural computing and agent-based methodologies in computational finance and economics. The eleven chapters were selected following a rigorous, peer-reviewed, selection process.

Tools for Computational Finance Rüdiger U. Seydel 2013-06-29 Tools for Computational Finance offers a clear explanation of computational issues arising in financial mathematics. The new third edition is thoroughly revised and significantly extended, including an extensive new section on analytic methods, focused mainly on interpolation approach and quadratic approximation. Other new material is devoted to risk-neutrality, early-exercise curves, multidimensional Black-Scholes models, the integral representation of options and the derivation of the Black-Scholes equation. New figures, more exercises, and expanded background material make this guide a real must-to-have for everyone working in the world of financial engineering.

Information Management and Big Data Juan Antonio Lossio-Ventura 2019-02-07 This book constitutes the refereed proceedings of the 5th International Conference on Information Management and Big Data, SIMBig 2018, held in Lima, Peru, in September 2018. The 34 papers presented were carefully reviewed and selected from 101 submissions. The papers address issues such as data mining, artificial intelligence, Natural Language Processing, information retrieval, machine learning, web mining.

Computational Methods in Financial Engineering Erricos Kontoghiorghes 2008-02-26 Computational models and methods are central to the analysis of economic and financial decisions. Simulation and optimisation are widely used as tools of analysis, modelling and testing. The focus of this book is the development of computational methods and analytical models in financial engineering that rely on computation. The book contains eighteen chapters written by leading researchers in the area on portfolio optimization and option pricing; estimation and classification; banking; risk and macroeconomic modelling. It explores and brings together current research tools and will be of interest to researchers, analysts and practitioners in policy and investment decisions in economics and finance.

Entertainment Science Thorsten Hennig-Thurau 2018-08-01

The entertainment industry has long been dominated by legendary screenwriter William Goldman's "Nobody-Knows-Anything" mantra, which argues that success is the result of managerial intuition and instinct. This book builds the case that combining such intuition with data analytics and rigorous scholarly knowledge provides a source of sustainable competitive advantage — the same recipe for success that is behind the rise of firms such as Netflix and Spotify, but has also fueled Disney's recent success. Unlocking a large repertoire of scientific studies by business scholars and entertainment economists, the authors identify essential factors, mechanisms, and methods that help a new entertainment product succeed. The book thus offers a timely alternative to "Nobody-Knows" decision-making in the digital era: while coupling a good idea with smart data analytics and entertainment theory cannot guarantee a hit, it systematically and substantially increases the probability of success in the entertainment industry. Entertainment Science is poised to inspire fresh new thinking among managers, students of entertainment, and scholars alike. Thorsten Hennig-Thurau and Mark B. Houston — two of our finest scholars in the area of entertainment marketing — have produced a definitive research-based compendium that cuts across various branches of the arts to explain the phenomena that provide consumption experiences to capture the hearts and minds of audiences. Morris B. Holbrook, W. T. Dillard Professor Emeritus of Marketing, Columbia University Entertainment Science is a must-read for everyone working in the entertainment industry today, where the impact of digital and the use of big data can't be ignored anymore. Hennig-Thurau and Houston are the scientific frontrunners of knowledge that the industry urgently needs. Michael Kölmel, media entrepreneur and Honorary Professor of Media Economics at University of Leipzig Entertainment Science's winning combination of creativity, theory, and data analytics offers managers in the creative industries and beyond a novel, compelling, and comprehensive approach to support their decision-making. This ground-breaking book marks the dawn of a new Golden Age of fruitful conversation between entertainment scholars, managers, and artists. Allègre Hadida, Associate Professor in Strategy, University of Cambridge

Portfolio Management with Heuristic Optimization Dietmar G. Maringer 2006-07-02 Portfolio Management with Heuristic Optimization consist of two parts. The first part (Foundations) deals with the foundations of portfolio optimization, its assumptions, approaches and the limitations when "traditional" optimization techniques are to be applied. In addition, the basic concepts of several heuristic optimization techniques are presented along with examples of how to implement them for financial optimization problems. The second part (Applications and Contributions) consists of five chapters, covering different problems in financial optimization: the effects of (linear, proportional and combined) transaction costs together with integer constraints and limitations on the initital endowment to be invested; the diversification in small portfolios; the effect of cardinality constraints on the Markowitz efficient line; the effects (and hidden risks) of Value-at-Risk when used the relevant risk constraint; the problem factor selection for the Arbitrage Pricing Theory.

Personalized Machine Learning Julian McAuley 2022-01-31 Every day we interact with machine learning systems

offering individualized predictions for our entertainment, social connections, purchases, or health. These involve several modalities of data, from sequences of clicks to text, images, and social interactions. This book introduces common principles and methods that underpin the design of personalized predictive models for a variety of settings and modalities. The book begins by revising 'traditional' machine learning models, focusing on adapting them to settings involving user data, then presents techniques based on advanced principles such as matrix factorization, deep learning, and generative modeling, and concludes with a detailed study of the consequences and risks of deploying personalized predictive systems. A series of case studies in domains ranging from e-commerce to health plus hands-on projects and code examples will give readers understanding and experience with large-scale real-world datasets and the ability to design models and systems for a wide range of applications.

Quantile Regression Roger Koenker 2005-05-05 Quantile regression is gradually emerging as a unified statistical methodology for estimating models of conditional quantile functions. By complementing the exclusive focus of classical least squares regression on the conditional mean, quantile regression offers a systematic strategy for examining how covariates influence the location, scale and shape of the entire response distribution. This monograph is the first comprehensive treatment of the subject, encompassing models that are linear and nonlinear, parametric and nonparametric. The author has devoted more than 25 years of research to this topic. The methods in the analysis are illustrated with a variety of applications from economics, biology, ecology and finance. The treatment

will find its core audiences in econometrics, statistics, and applied mathematics in addition to the disciplines cited above.
Feature Engineering for Machine Learning Alice Zheng 2018-03-23 Feature engineering is a crucial step in the machine-learning pipeline, yet this topic is rarely examined on its own. With this practical book, you'll learn techniques for extracting and transforming features—the numeric representations of raw data—into formats for machine-learning models. Each chapter guides you through a single data problem, such as how to represent text or image data. Together, these examples illustrate the main principles of feature engineering. Rather than simply teach these principles, authors Alice Zheng and Amanda Casari focus on practical application with exercises throughout the book. The closing chapter brings everything together by tackling a real-world, structured dataset with several feature-engineering techniques. Python packages including numpy, Pandas, Scikit-learn, and Matplotlib are used in code examples. You'll examine: Feature engineering for numeric data: filtering, binning, scaling, log transforms, and power transforms Natural text techniques: bag-of-words, n-grams, and phrase detection Frequency-based filtering and feature scaling for eliminating uninformative features Encoding techniques of categorical variables, including feature hashing and bin-counting Model-based feature engineering with principal component analysis The concept of model stacking, using k-means as a featurization technique Image feature extraction with manual and deep-learning techniques
Optimisation, Econometric and Financial Analysis Erricos Kontoghiorghes 2007-05-17 This book addresses issues associated with the interface of computing,

optimisation, econometrics and financial modeling, emphasizing computational optimisation methods and techniques. The first part addresses optimisation problems and decision modeling, plus applications of supply chain and worst-case modeling and advances in methodological aspects of optimisation techniques. The second part covers optimisation heuristics, filtering, signal extraction and time series models. The final part discusses optimisation in portfolio selection and real option modeling.

Recommender Systems Dietmar Jannach 2010-09-30 In this age of information overload, people use a variety of strategies to make choices about what to buy, how to spend their leisure time, and even whom to date. Recommender systems automate some of these strategies with the goal of providing affordable, personal, and high-quality recommendations. This book offers an overview of approaches to developing state-of-the-art recommender systems. The authors present current algorithmic approaches for generating personalized buying proposals, such as collaborative and content-based filtering, as well as more interactive and knowledge-based approaches. They also discuss how to measure the effectiveness of recommender systems and illustrate the methods with practical case studies. The final chapters cover emerging topics such as recommender systems in the social web and consumer buying behavior theory. Suitable for computer science researchers and students interested in getting an overview of the field, this book will also be useful for professionals looking for the right technology to build real-world recommender systems.

An Introduction to Financial Option Valuation Desmond Higham 2004-04-15 This is a lively textbook providing a solid introduction to financial option valuation for undergraduate students armed with a working knowledge of a first year calculus. Written in a series of short chapters, its self-contained treatment gives equal weight to applied mathematics, stochastics and computational algorithms. No prior background in probability, statistics or numerical analysis is required. Detailed derivations of both the basic asset price model and the Black–Scholes equation are provided along with a presentation of appropriate computational techniques including binomial, finite differences and in particular, variance reduction techniques for the Monte Carlo method. Each chapter comes complete with accompanying stand-alone MATLAB code listing to illustrate a key idea. Furthermore, the author has made heavy use of figures and examples, and has included computations based on real stock market data.