

# Portfolio Management With Heuristic Optimization

## Author Dietmar Maringer Dec 2005

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**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.

### **Applications of Topic**

**Models** Jordan Boyd-Graber 2017-07-13 Describes recent academic and industrial applications of topic models with the goal of launching a young researcher capable of building their own applications of topic models.

*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.

*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.

**Who's who in Finance and Industry 2000-2001** 1999

*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.

**The Democratization of Artificial Intelligence**

Andreas Sudmann 2019-10-31

After a long time of neglect, Artificial Intelligence is once again at the center of most of

our political, economic, and socio-cultural debates. Recent advances in the field of Artificial Neural Networks have led to a renaissance of dystopian and utopian speculations on an AI-rendered future. Algorithmic technologies are deployed for identifying potential terrorists through vast surveillance networks, for producing sentencing guidelines and recidivism risk profiles in criminal justice systems, for demographic and psychographic targeting of bodies for advertising or propaganda, and more generally for automating the analysis of language, text, and images. Against this background, the aim of this book is to discuss the heterogenous conditions, implications, and effects of modern AI and Internet technologies in terms of their political dimension: What does it mean to critically investigate efforts of net politics in the age of machine learning algorithms?

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.

### **High Performance**

**Computing** Michela Taufer 2016-10-05 This book constitutes revised selected papers from 7 workshops that were held in conjunction with the ISC High Performance 2016 conference in Frankfurt, Germany, in June 2016. The 45

papers presented in this volume were carefully reviewed and selected for inclusion in this book. They stem from the following workshops: Workshop on Exascale Multi/Many Core Computing Systems, E-MuCoCoS; Second International Workshop on Communication Architectures at Extreme Scale, ExaComm; HPC I/O in the Data Center Workshop, HPC-IODC; International Workshop on OpenPOWER for HPC, IWOPH; Workshop on the Application Performance on Intel Xeon Phi - Being Prepared for KNL and Beyond, IXPUG; Workshop on Performance and Scalability of Storage Systems, WOPSSS; and International Workshop on Performance Portable Programming Models for Accelerators, P3MA.

**Information Modeling for Interoperable Dimensional Metrology** Y Zhao 2011-08-28 Dimensional metrology is an essential part of modern manufacturing technologies, but the basic theories and measurement methods are no

longer sufficient for today's digitized systems. The information exchange between the software components of a dimensional metrology system not only costs a great deal of money, but also causes the entire system to lose data integrity. Information Modeling for Interoperable Dimensional Metrology analyzes interoperability issues in dimensional metrology systems and describes information modeling techniques. It discusses new approaches and data models for solving interoperability problems, as well as introducing process activities, existing and emerging data models, and the key technologies of dimensional metrology systems. Written for researchers in industry and academia, as well as advanced undergraduate and postgraduate students, this book gives both an overview and an in-depth understanding of complete dimensional metrology systems. By covering in detail the theory and main content, techniques, and

methods used in dimensional metrology systems, Information Modeling for Interoperable Dimensional Metrology enables readers to solve real-world dimensional measurement problems in modern dimensional metrology practices.

### **Universities in Change**

Andreas Altmann 2012-09-10

Universities find themselves in dynamic change. They are confronted with growing expectations from their stakeholders, increasing international competition, and new technological challenges. Featuring insights and in-depth case studies from leading researchers and university decision makers from around the world, this book argues that institutions of higher education, in order to be successful, have to actively reflect on circumstances, visions, and strategies to master the future. Drawing from their experiences across a diverse array of institutions in Europe, Asia, and the Americas, the authors explore the pressures on today's

universities and the opportunities for excelling in the contest for resources. They discuss operational issues, such as strategic management, IT governance, leadership development, and entrepreneurial culture, and broader concerns, such as the roles and responsibilities of universities in promoting technology transfer and economic and social development. The result is a resource that not only reveals and analyzes universities from an organizational perspective, but presents best practice models and concrete inspiration for management and policymaking.

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 initial 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.

*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 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. Who's who in Finance and Business 2004 **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.

*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.

*Heuristic and Optimization for Knowledge Discovery*

Abbass, Hussein A. 2001-07-01 With the large amount of data stored by many organizations, capitalists have observed that this information is an intangible asset. Unfortunately, handling large databases is a very complex process and traditional learning techniques are expensive to use. Heuristic techniques provide much help in this arena, although little is

known about heuristic techniques. Heuristic and Optimization for Knowledge Discovery addresses the foundation of this topic, as well as its practical uses, and aims to fill in the gap that exists in current literature.

*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

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.

**Production Factor Mathematics** Martin

Grötschel 2010-08-05

Mathematics as a production factor or driving force for innovation? Those, who want to know and understand why mathematics is deeply involved in the design of products, the layout of production processes and supply chains will find this book an indispensable and rich source. Describing the interplay between mathematical and engineering sciences the book focusses on questions like How can mathematics improve to the improvement of technological processes and products? What is happening already? Where are the deficits? What can we expect for the future? 19 articles written by mixed teams of authors of engineering, industry and mathematics offer a fascinating insight of the interaction between mathematics and engineering.

### **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

Hagenberg Research Bruno Buchberger 2009-05-29

BrunoBuchberger This book is a synopsis of basic and applied research done at the various research 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 Austrian Government with the objective of creating a scientific, technological, and economic impulse for the region and the international

community. In the meantime, in a joint effort, 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.

*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 *Who's who in Finance and Industry* 2001  
*Active Materials* Peter Fratzl

2021-12-20 What are active materials? This book aims to introduce and redefine conceptions of matter by considering materials as entities that 'sense' and respond to their environment. By examining the modeling of, the experiments on, and the construction of these materials, and by developing a theory of their structure, their collective activity, and their functionality, this volume identifies and develops a novel scientific approach to active materials. Moreover, essays on the history and philosophy of metallurgy, chemistry, biology, and materials science provide these various approaches to active materials with a historical and cultural context. The interviews with experts from the natural sciences included in this volume develop new understandings of 'active matter' and active materials in relation to a range of research objects and from the perspective of different scientific disciplines, including biology, physics, chemistry, and materials science. These

insights are complemented by contributions on the activity of matter and materials from the humanities and the design field. Discusses the mechanisms of active materials and their various conceptualizations in materials science. Redefines conceptions of active materials through interviews with experts from the natural sciences. Contextualizes, historicizes, and reflects on different notions of matter/materials and activity through contributions from the humanities. A highly interdisciplinary approach to a cutting-edge research topic, with contributions from both the sciences and the humanities.

*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.

### **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.

*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](http://bloomsburyonlineresources.com/effective-management). These resources are designed to support teaching and learning when using this textbook and are available at no extra cost.

### *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.

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.

*Towards Sustainable*

*Innovation* Sven Pastoors

2017-02-17 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.

**Mathematical Reviews** 2004  
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.

**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.

**The Constitution of Algorithms**

Florian Jatton 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 Jatón 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.

### **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 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.

**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.

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.