Automated Trading With Boosting And Expert Weighting Ssrn

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This book constitutes the thoroughly refereed post-conference proceedings of the Second International ICST Conference on Complex Sciences, COMPLEX 2012, held in Santa Fe, New Mexico, USA in December 2012. The 29 revised full papers presented were carefully reviewed and selected from various submissions. The papers cover aspects on foundations and analysis of complex systems, complex biological systems, complex social systems, complex engineering systems.
Successful investment strategies are specific implementations of general theories. An investment strategy that lacks a theoretical justification is likely to be false. Hence, an asset manager should concentrate her efforts on developing a theory rather than on backtesting potential trading rules. The purpose of this Element is to introduce machine learning (ML) tools that can help asset managers discover economic and financial theories. ML is not a black box, and it does not necessarily overfit. ML tools complement rather than replace the

classical statistical methods. Some of ML's strengths include (1) a focus on out-of-sample predictability over variance adjudication; (2) the use of computational methods to avoid relying on (potentially unrealistic) assumptions; (3) the ability to "learn" complex specifications, including nonlinear, hierarchical, and noncontinuous interaction effects in a high-dimensional space; and (4) the ability to disentangle the variable search from the specification search, robust to multicollinearity and other substitution effects.

Automated trading in electronic markets is one of the most common and consequential applications of autonomous software agents. Design of effective trading strategies requires thorough understanding of how market mechanisms operate, and appreciation of strategic issues that commonly manifest in trading scenarios. Drawing on research in auction theory and artificial intelligence, this book presents core principles of strategic reasoning that apply to market situations. The author illustrates trading strategy choices through examples of concrete market environments, such as eBay, as well as abstract market models defined by configurations of auctions and traders. Techniques for addressing these choices constitute essential building blocks for the design of trading strategies for rich market applications. The lecture assumes no prior background in game theory or auction theory, or artificial intelligence. Table of Contents:

Introduction / Example: Bidding on eBay / Auction Fundamentals / Continuous Double Auctions / Interdependent Markets / Conclusion

Algorithmic Trading and Quantitative Strategies provides an in-depth overview of this growing field with a unique mix of quantitative rigor and practitioner's hands-on experience. The focus on empirical modeling and practical know-how makes this book a valuable resource for students and professionals. The book starts with the often overlooked context of why and how we trade via a detailed introduction to market structure and quantitative microstructure models. The authors then present the necessary quantitative toolbox including more advanced machine learning models needed to successfully operate in the field. They next discuss the subject of quantitative trading, alpha generation, active portfolio management and more recent topics like news and sentiment analytics. The last main topic of execution algorithms is covered in detail with emphasis on the state of the field and critical topics including the elusive concept of market impact. The book concludes with a discussion on the technology infrastructure necessary to implement algorithmic strategies in large-scale production settings. A git-hub repository includes data-sets and explanatory/exercise Jupyter notebooks. The exercises involve adding the correct code to solve the particular analysis/problem.

This text presents different models of limit order books and introduces a flexible open-source library, useful to those studying trading strategies.

This book constitutes the refereed proceedings of the International Conference on the Applications of Evolutionary Computation, EvoApplications 2011, held in Torino, Italy, in April 2011 colocated with the Evo* 2011 events. Thanks to the large number of submissions received, the proceedings for EvoApplications 2011 are divided across two volumes (LNCS 6624 and 6625). The present volume contains contributions for EvoCOMNET, EvoFIN, EvoIHOT, EvoMUSART, EvoSTIM, and EvoTRANSLOC. The 51 revised full papers presented were carefully reviewed and selected from numerous submissions. This volume presents an overview about the latest research in EC. Areas where evolutionary computation techniques have been applied range from telecommunication networks to complex systems, finance and economics, games, image analysis, evolutionary music and art, parameter optimization, scheduling, and logistics. These papers may provide guidelines to help new researchers tackling their own problem using EC.

"Life on earth is filled with many mysteries, but perhaps the most challenging of these is the nature of Intelligence." – Prof. Terrence J. Sejnowski, Computational Neurobiologist The main objective of this book is to create awareness about both

the promises and the formidable challenges that the era of Data-Driven Decision-Making and Machine Learning are confronted with, and especially about how these new developments may influence the future of the financial industry. The subject of Financial Machine Learning has attracted a lot of interest recently, specifically because it represents one of the most challenging problem spaces for the applicability of Machine Learning. The author has used a novel approach to introduce the reader to this topic: The first half of the book is a readable and coherent introduction to two modern topics that are not generally considered together: the data-driven paradigm and Computational Intelligence. The second half of the book illustrates a set of Case Studies that are contemporarily relevant to quantitative trading practitioners who are dealing with problems such as trade execution optimization, price dynamics forecast, portfolio management, market making, derivatives valuation, risk, and compliance. The main purpose of this book is pedagogical in nature, and it is specifically aimed at defining an adequate level of engineering and scientific clarity when it comes to the usage of the term "Artificial Intelligence," especially as it relates to the financial industry. The message conveyed by this book is one of confidence in the possibilities offered by this new era of Data-Intensive Computation. This message is not grounded on the current hype surrounding the latest technologies, but on a deep analysis of

their effectiveness and also on the author's two decades of professional experience as a technologist, quant and academic.

Data Mining for Business Applications presents the state-of-the-art research and development outcomes on methodologies, techniques, approaches and successful applications in the area. The contributions mark a paradigm shift from "data-centered pattern mining" to "domain driven actionable knowledge discovery" for next-generation KDD research and applications. The contents identify how KDD techniques can better contribute to critical domain problems in theory and practice, and strengthen business intelligence in complex enterprise applications. The volume also explores challenges and directions for future research and development in the dialogue between academia and business. Predict the future more accurately in today's difficult trading times The Holy Grail of trading is knowing what the markets will do next. Technical analysis is the art of predicting the market based on tested systems. Some systems work well when markets are "trending," and some work well when they are "cycling," going neither up nor down, but sideways. In Trading with Signal Analysis, noted technical analyst John Ehlers applies his engineering expertise to develop techniques that predict the future more accurately in these times that are otherwise so difficult to trade. Since cycles and trends exist in every time horizon,

these methods are useful even in the strongest bull--or bear--market. John F. Ehlers (Goleta, CA) speaks internationally on the subject of cycles in the market and has expanded the scope of his contributions to technical analysis through the application of scientific digital signal processing techniques.

This book constitutes the thoroughly refereed post-workshop proceedings of the 7th International Workshop on Agents and Data Mining Interaction, ADMI 2011, held in Taipei, Taiwan, in May 2011 in conjunction with AAMAS 2011, the 10th International Joint Conference on Autonomous Agents and Multiagent Systems. The 11 revised full papers presented were carefully reviewed and selected from 24 submissions. The papers are organized in topical sections on agents for data mining; data mining for agents; and agent mining applications.

Overview and analysis of algorithmic advances developed within an integrated bidding agent architecture that emerged from recent research in a growing domain of AI.

Results. This dissertation offers a novel approach to using boosting as a predictive and interpretative tool for problems in finance. Even more, we demonstrate how boosting can support the automation of strategic planning and trading functions.

Electronic and algorithmic trading has become part of a mainstream response to

buy-side traders' need to move large blocks of shares with minimum market impact in today's complex institutional trading environment. This book illustrates an overview of key providers in the marketplace. With electronic trading platforms becoming increasingly sophisticated, more cost effective measures handling larger order flow is becoming a reality. The higher reliance on electronic trading has had profound implications for vendors and users of information and trading products. Broker dealers providing solutions through their products are facing changes in their business models such as: relationships with sellside customers, relationships with buyside customers, the importance of broker neutrality, the role of direct market access, and the relationship with prime brokers. Electronic and Algorithmic Trading Technology: The Complete Guide is the ultimate guide to managers, institutional investors, broker dealers, and software vendors to better understand innovative technologies that can cut transaction costs, eliminate human error, boost trading efficiency and supplement productivity. As economic and regulatory pressures are driving financial institutions to seek efficiency gains by improving the quality of software systems, firms are devoting increasing amounts of financial and human capital to maintaining their competitive edge. This book is written to aid the management and development of IT systems for financial institutions. Although the book focuses on the securities industry, its

solution framework can be applied to satisfy complex automation requirements within very different sectors of financial services – from payments and cash management, to insurance and securities. Electronic and Algorithmic Trading: The Complete Guide is geared toward all levels of technology, investment management and the financial service professionals responsible for developing and implementing cutting-edge technology. It outlines a complete framework for successfully building a software system that provides the functionalities required by the business model. It is revolutionary as the first guide to cover everything from the technologies to how to evaluate tools to best practices for IT management. First book to address the hot topic of how systems can be designed to maximize the benefits of program and algorithmic trading Outlines a complete framework for developing a software system that meets the needs of the firm's business model Provides a robust system for making the build vs. buy decision based on business requirements

Artificial intelligence (AI) has grown in presence in asset management and has revolutionized the sector in many ways. It has improved portfolio management, trading, and risk management practices by increasing efficiency, accuracy, and compliance. In particular, AI techniques help construct portfolios based on more accurate risk and return forecasts and more complex constraints. Trading

algorithms use AI to devise novel trading signals and execute trades with lower transaction costs. AI also improves risk modeling and forecasting by generating insights from new data sources. Finally, robo-advisors owe a large part of their success to AI techniques. Yet the use of AI can also create new risks and challenges, such as those resulting from model opacity, complexity, and reliance on data integrity.

"Trading is notoriously tough. But Altucher's new book adds anoteworthy addition to the library on Warren Buffett. He shows alot of Buffett that isn't readily available in the existing commonliterature. Definitely required reading for any serious Buffettbuff." -Kenneth L. Fisher, Forbes' "Portfolio Strategy" Columnist Founderand CEO, Fisher Investments "Finally, someone blows apart the myth that Warren Buffett is abuy-and-hold investor. Altucher has given us an insightful andwell-written commentary on how Buffett has amassed his trackrecord, and what we can do to emulate him. He details thetrade-by-trade examples. This is a must read for anyone wanting tolearn about how the Master Investor works." -John Mauldin, author, Bull's Eye Investing editor of Thoughts fromthe Frontline (www.2000wave.com) While Warren Buffett is considered the "world's greatest valueinvestor," there's another side to Buffett that is rarely talkedabout. Although Buffett has gained recognition for his valueinvesting approach to the markets, the

fact is that nobody-over thepast fifty years-has traded and invested with a more diverse groupof strategies than Buffett. Trade Like Warren Buffett challenges the current coverage of thisgreat investor by including details of all of Buffett's investingand trading methods, including mean reversion, commodities, bonds,arbitrage, market timing, funds, as well as Graham-Dodd. To augmentthe discussion of each strategy, Trade Like Warren Buffett alsoincludes interviews with leading financial professionals, whoreveal in detail how they've successfully used the sametechniques. There is no one way to sum up Warren Buffett's investment style.But if you're interested in boosting the performance of yourportfolio, Trade Like Warren Buffett can show you how.

This book constitutes the revised selected papers of the 13th Italian Workshop on Artificial Life and Evolutionary Computation, WIVACE 2018, held in Parma, Italy, in September 2018. The 12 full papers presented were thoroughly reviewed and selected from 30 submissions. They cover the following topics: Boolean networks and complex systems; economic, societal and technological applications; chemical, biological and medical applications. The chapter "Unveiling Latent Relations in the Photonics Techno-Economic Complex System" is open access under a CC BY 4.0 license at link.springer.com.

"Trading at the Speed of Light tells the story of how many of our most important

financial markets have transformed from physical trading floors on which human beings trade face-to-face, into electronic systems within which computer algorithms trade with each other. Tracing the emergence of ultrafast, automated, high-frequency trading (HFT) since the early 2000s, Donald MacKenzie draws particular attention to the importance of what he deems the 'material political economy' of twenty-first century finance. Fast transmission of price data used to involve fibre-optic cables, but the strands in such cables are made of materials (usually a specialised form of glass) which slow light down to around two-thirds of its speed in free space. By contrast, microwave and other wireless signals used in HFT travel through the atmosphere at nearly full light speed. At these nanosecond speeds, the physical nature of information transmission and the precise spatial location of the equipment involved become hugely important, thus creating inevitable pinch points in the system. MacKenzie details the ways in which these pinch points - individual frequency bands, specific locations on the roofs of computer data centres, and particular sites for microwave towers - are especially advantageous, making it possible for those who control them to profit from that control. The book draws from over 300 interviews conducted with high-frequency traders around the world, the people who supply them with technological systems and communication links, exchange staff and regulators,

as well as with others who function within markets that have not yet become dominated by HFT. MacKenzie focuses most closely upon the four main sites of international HFT - Chicago, New York, Amsterdam, and London - and examines both the technology and the politics underpinning modern financial markets"-- A fully revised second edition of the best guide to high-frequency trading High-frequency trading is a difficult, but profitable, endeavor that can generate stable profits in various market conditions. But solid footing in both the theory and practice of this discipline are essential to success. Whether you're an institutional investor seeking a better understanding of high-frequency operations or an individual investor looking for a new way to trade, this book has what you need to make the most of your time in today's dynamic markets. Building on the success of the original edition, the Second Edition of High-Frequency Trading incorporates the latest research and questions that have come to light since the publication of the first edition. It skillfully covers everything from new portfolio management techniques for high-frequency trading and the latest technological developments enabling HFT to updated risk management strategies and how to safeguard information and order flow in both dark and light markets. Includes numerous quantitative trading strategies and tools for building a high-frequency trading system Address the most essential aspects of high-frequency trading,

from formulation of ideas to performance evaluation The book also includes a companion Website where selected sample trading strategies can be downloaded and tested Written by respected industry expert Irene Aldridge While interest in high-frequency trading continues to grow, little has been published to help investors understand and implement this approach—until now. This book has everything you need to gain a firm grip on how high-frequency trading works and what it takes to apply it to your everyday trading endeavors.

Responding to growing interest in new regulations adopted by the EU, US, and UK authorities, this book provides a comprehensive overview of the legal and economic aspects of FinTech and the current regulation surrounding it. In particular, the book observes the technological evolution of finance and the 'economic space' that lies between the regulated market and the illegal circulation of capital. Analysing laws that influence the application of technology to the banking and finance sector, the author considers market infrastructure and illustrates how firms execute their activities on a global scale, away from the scope of public supervision and monetary backstops. With globalisation and digitalisation boosting efficiency, the economical relevance of technology is becoming ever more important and therefore this book provides a much-needed examination of the current trends in FinTech regulation, making it an essential

read for those researching financial markets, and professionals within the industry.

With the help of this book, you'll build smart algorithmic models using machine learning algorithms covering tasks such as time series forecasting, backtesting, trade predictions, and more using easy-to-follow examples. By the end, you'll be able to adopt algorithmic trading in your own business and implement intelligent investigative strategies.

This Palgrave Pivot innovatively combines new methods and approaches to building dynamic trading systems to forecast future price direction in today's increasingly difficult and volatile financial markets. The primary purpose of this book is to provide a structured course for building robust algorithmic trading models that forecast future price direction. Chan provides insider information and insights on trading strategies; her knowledge and experience has been gained over two decades as a trader in foreign exchange, stock and derivatives markets. She guides the reader to build, evaluate, and test the predictive ability and the profitability of abnormal returns of new hybrid forecasting models.

The book provides detailed descriptions, including more than 550 mathematical formulas, for more than 150 trading strategies across a host of asset classes and trading styles. These include stocks, options, fixed income, futures, ETFs,

indexes, commodities, foreign exchange, convertibles, structured assets, volatility, real estate, distressed assets, cash, cryptocurrencies, weather, energy, inflation, global macro, infrastructure, and tax arbitrage. Some strategies are based on machine learning algorithms such as artificial neural networks, Bayes, and k-nearest neighbors. The book also includes source code for illustrating out-of-sample backtesting, around 2,000 bibliographic references, and more than 900 glossary, acronym and math definitions. The presentation is intended to be descriptive and pedagogical and of particular interest to finance practitioners, traders, researchers, academics, and business school and finance program students.

In today's world, we are increasingly exposed to the words 'machine learning' (ML), a term which sounds like a panacea designed to cure all problems ranging from image recognition to machine language translation. Over the past few years, ML has gradually permeated the financial sector, reshaping the landscape of quantitative finance as we know it.An Introduction to Machine Learning in Quantitative Finance aims to demystify ML by uncovering its underlying mathematics and showing how to apply ML methods to real-world financial data. In this book the authorsFeatured with the balance of mathematical theorems and practical code examples of ML, this book will help you acquire an in-depth

understanding of ML algorithms as well as hands-on experience. After reading An Introduction to Machine Learning in Quantitative Finance, ML tools will not be a black box to you anymore, and you will feel confident in successfully applying what you have learnt to empirical financial data!

This book focuses on key Python analytics and algorithmic trading libraries used for backtesting. With the help of practical examples, you will learn the principle aspects of trading strategy development. The 14 profitable strategies included in the book will also help you build intuitions that will enable you to create your own strategy.

CUTTING-EDGE DEVELOPMENTS IN HIGH-FREQUENCY FINANCIAL ECONOMETRICS In recent years, the availability of high-frequency data and advances in computing have allowed financial practitioners to design systems that can handle and analyze this information. Handbook of Modeling High-Frequency Data in Finance addresses the many theoretical and practical questions raised by the nature and intrinsic properties of this data. A one-stop compilation of empirical and analytical research, this handbook explores data sampled with high-frequency finance in financial engineering, statistics, and the modern financial business arena. Every chapter uses real-world examples to present new, original, and relevant topics that relate to newly evolving discoveries in high-frequency finance, such as: Designing new methodology to discover elasticity and plasticity of price evolution Constructing microstructure simulation models Calculation of option prices in the presence of jumps and transaction

costs Using boosting for financial analysis and trading The handbook motivates practitioners to apply high-frequency finance to real-world situations by including exclusive topics such as risk measurement and management, UHF data, microstructure, dynamic multi-period optimization, mortgage data models, hybrid Monte Carlo, retirement, trading systems and forecasting, pricing, and boosting. The diverse topics and viewpoints presented in each chapter ensure that readers are supplied with a wide treatment of practical methods. Handbook of Modeling High-Frequency Data in Finance is an essential reference for academics and practitioners in finance, business, and econometrics who work with high-frequency data in their everyday work. It also serves as a supplement for risk management and high-frequency finance courses at the upper-undergraduate and graduate levels.

Machine Learning for Algorithmic Trading - Second EditionStatistically Sound Machine Learning for Algorithmic Trading of Financial InstrumentsDeveloping Predictive-model-based Trading Systems Using TSSBCreatespace Independent Pub

This book includes a selection of papers from the 2018 World Conference on Information Systems and Technologies (WorldCIST'18), held in Naples, Italy on March27-29, 2018. WorldCIST is a global forum for researchers and practitioners to present and discuss recent results and innovations, current trends, professional experiences and the challenges of modern information systems and technologies research together with their technological development and applications. The main

topics covered are: A) Information and Knowledge Management; B) Organizational Models and Information Systems; C) Software and Systems Modeling; D) Software Systems, Architectures, Applications and Tools; E) Multimedia Systems and Applications; F) Computer Networks, Mobility and Pervasive Systems; G) Intelligent and Decision Support Systems; H) Big Data Analytics and Applications; I) Human–Computer Interaction; J) Ethics, Computers & Security; K) Health Informatics; L) Information Technologies in Education; M) Information Technologies in Radiocommunications; N) Technologies for Biomedical Applications.
Design more successful trading systems with this practical guide to identifying alphas Finding Alphas seeks to teach you how to do one thing and do it well: design alphas. Written by experienced practitioners from WorldQuant, including its founder and CEO Igor Tulchinsky, this book provides detailed insight into the alchemic art of generating trading signals, and gives you access to the tools you need to practice and explore. Equally applicable across regions, this practical guide provides you with methods for uncovering the hidden signals in your data. A collection of essays provides diverse viewpoints to show the similarities, as well as unique approaches, to alpha design, covering a wide variety of topics, ranging from abstract theory to concrete technical aspects. You'll learn the dos and don'ts of information research, fundamental analysis, statistical arbitrage, alpha diversity, and more, and then delve into more advanced areas and more complex designs. The companion website,

www.worldquantchallenge.com, features alpha examples with formulas and explanations. Further, this book also provides practical guidance for using WorldQuant's online simulation tool WebSim® to get hands-on practice in alpha design. Alpha is an algorithm which trades financial securities. This book shows you the ins and outs of alpha design, with key insight from experienced practitioners. Learn the seven habits of highly effective quants Understand the key technical aspects of alpha design Use WebSim® to experiment and create more successful alphas Finding Alphas is the detailed, informative guide you need to start designing robust, successful alphas. This open access book presents the first comprehensive overview of general methods in Automated Machine Learning (AutoML), collects descriptions of existing systems based on these methods, and discusses the first series of international challenges of AutoML systems. The recent success of commercial ML applications and the rapid growth of the field has created a high demand for off-the-shelf ML methods that can be used easily and without expert knowledge. However, many of the recent machine learning successes crucially rely on human experts, who manually select appropriate ML architectures (deep learning architectures or more traditional ML workflows) and their hyperparameters. To overcome this problem, the field of AutoML targets a progressive automation of machine learning, based on principles from optimization and machine learning itself. This book serves as a point of entry into this quickly-developing field for researchers and advanced students alike, as well as providing a reference for

practitioners aiming to use AutoML in their work.

A Guide to Trading and Profiting in Any MarketThomas StridsmanWhile most trading books simply tack money management onto the end of the book as an afterthought, Trading Systems and Money Management recognizes the importance of proven money management principles to the success of a trading program. This step-by-step guide shows how to use stops to improve profit taking and reduce losses, add filters such as moving averages and breakouts to improve entry and exit points, and practice basic money management techniques to improve the performance of any trading system.

Big Money, Less Risk: Trade Options will put the income boosting power of strategies like writing covered calls, selling naked put options, and placing vertical spread trades or iron condors in your hands. Mark Larson has become one of the most sought after trading educators because of his ability to make once elusive investment approaches accessible to every trader. Success in the stock market is determined by consistently making money every month, not closing your eyes and hoping you can afford to retire. With this book, Larson divulges the secrets to making your money work for you instead of having to work for your money. Ever dream about making 30% in one month? Big Money, Less Risk: Trade Options will put the income boosting power of strategies like writing covered calls, selling naked put options, and placing vertical spread trades or iron condors in your hands. Mark Larson has become one of the most sought after trading educators because of his ability to make once elusive investment approaches

accessible to every trader. Success in the stock market is determined by consistently making money every month, not closing your eyes and hoping you can afford to retire. With this book, Larson divulges the secrets to making your money work for you instead of having to work for your money. Inside you'll learn: How to repeatedly make money when the market goes up or down. Investment strategies that allow for huge returns with the use of very little money. How to purchase good stocks at discount prices. How to make significant returns even if you are wrong on the trade. Larson will alo cover the importance of option pricing, implied volatility, the Greeks such as delta, theta, and gamma, and the probability of your option expiring profitable. Most important, you will get, in plain English, some of his favorite technical indicators and the key to how they will form the basis of your options trading success.

Machine learning (ML) is changing virtually every aspect of our lives. Today ML algorithms accomplish tasks that until recently only expert humans could perform. As it relates to finance, this is the most exciting time to adopt a disruptive technology that will transform how everyone invests for generations. Readers will learn how to structure Big data in a way that is amenable to ML algorithms; how to conduct research with ML algorithms on that data; how to use supercomputing methods; how to backtest your discoveries while avoiding false positives. The book addresses real-life problems faced by practitioners on a daily basis, and explains scientifically sound solutions using math, supported by code and examples. Readers become active users who can test the proposed solutions in their particular setting. Written by a recognized expert and portfolio manager, this book will equip investment professionals with the

groundbreaking tools needed to succeed in modern finance.

The field of financial econometrics has exploded over the last decade This book represents an integration of theory, methods, and examples using the S-PLUS statistical modeling language and the S+FinMetrics module to facilitate the practice of financial econometrics. This is the first book to show the power of S-PLUS for the analysis of time series data. It is written for researchers and practitioners in the finance industry, academic researchers in economics and finance, and advanced MBA and graduate students in economics and finance. Readers are assumed to have a basic knowledge of S-PLUS and a solid grounding in basic statistics and time series concepts. This Second Edition is updated to cover S+FinMetrics 2.0 and includes new chapters on copulas, nonlinear regime switching models, continuous-time financial models, generalized method of moments, semi-nonparametric conditional density models, and the efficient method of moments. Eric Zivot is an associate professor and Gary Waterman Distinguished Scholar in the Economics Department, and adjunct associate professor of finance in the Business School at the University of Washington. He regularly teaches courses on econometric theory, financial econometrics and time series econometrics, and is the recipient of the Henry T. Buechel Award for Outstanding Teaching. He is an associate editor of Studies in Nonlinear Dynamics and Econometrics. He has published papers in the leading econometrics journals, including Econometrica, Econometric Theory, the Journal of Business and Economic Statistics, Journal of Econometrics, and the Review of Economics and Statistics. Jiahui Wang is an employee of Ronin Capital LLC. He received a Ph.D. in Economics from the University of Washington in 1997. He has published in leading econometrics journals such as Econometrica and Journal of Business and Economic Statistics,

and is the Principal Investigator of National Science Foundation SBIR grants. In 2002 Dr. Wang was selected as one of the "2000 Outstanding Scholars of the 21st Century" by International Biographical Centre.

This book serves two purposes. First, it teaches the importance of using sophisticated yet accessible statistical methods to evaluate a trading system before it is put to real-world use. In order to accommodate readers having limited mathematical background, these techniques are illustrated with step-by-step examples using actual market data, and all examples are explained in plain language. Second, this book shows how the free program TSSB (Trading System Synthesis & Boosting) can be used to develop and test trading systems. The machine learning and statistical algorithms available in TSSB go far beyond those available in other off-the-shelf development software. Intelligent use of these state-of-the-art techniques greatly improves the likelihood of obtaining a trading system whose impressive backtest results continue when the system is put to use in a trading account. Among other things, this book will teach the reader how to: Estimate future performance with rigorous algorithms Evaluate the influence of good luck in backtests Detect overfitting before deploying your system Estimate performance bias due to model fitting and selection of seemingly superior systems Use state-of-the-art ensembles of models to form consensus trade decisions Build optimal portfolios of trading systems and rigorously test their expected performance Search thousands of markets to find subsets that are especially predictable Create trading systems that specialize in specific market regimes such as trending/flat or high/low volatility More information on the TSSB program can be found at TSSBsoftware dot com.

With the aim to sequentially determine optimal allocations across a set of assets, Online

Portfolio Selection (OLPS) has significantly reshaped the financial investment landscape. Online Portfolio Selection: Principles and Algorithms supplies a comprehensive survey of existing OLPS principles and presents a collection of innovative strategies that leverage machine learning techniques for financial investment. The book presents four new algorithms based on machine learning techniques that were designed by the authors, as well as a new back-test system they developed for evaluating trading strategy effectiveness. The book uses simulations with real market data to illustrate the trading strategies in action and to provide readers with the confidence to deploy the strategies themselves. The book is presented in five sections that: Introduce OLPS and formulate OLPS as a sequential decision task Present key OLPS principles, including benchmarks, follow the winner, follow the loser, pattern matching, and meta-learning Detail four innovative OLPS algorithms based on cutting-edge machine learning techniques Provide a toolbox for evaluating the OLPS algorithms and present empirical studies comparing the proposed algorithms with the state of the art Investigate possible future directions Complete with a back-test system that uses historical data to evaluate the performance of trading strategies, as well as MATLAB® code for the back-test systems, this book is an ideal resource for graduate students in finance, computer science, and statistics. It is also suitable for researchers and engineers interested in computational investment. Readers are encouraged to visit the authors' website for updates: http://olps.stevenhoi.org.
This two –volume set, LNCS 10366 and 10367, constitutes the thoroughly refereed proceedings of the First International Joint Conference, APWeb-WAIM 2017, held in Beijing, China in July 2017. The 44 full papers presented together with 32 short papers and 10

demonstrations papers were carefully reviewed and selected from 240 submissions. The papers are organized around the following topics: spatial data processing and data quality; graph data processing; data mining, privacy and semantic analysis; text and log data management; social networks; data mining and data streams; query processing; topic modeling; machine learning; recommendation systems; distributed data processing and applications; machine learning and optimization.

This book constitutes the thoroughly refereed post-conference proceedings of the International Conference on the Applications of Evolutionary Computation, EvoApplications 2014, held in Granada, Spain, in April 2014, colocated with the Evo* 2014 events EuroGP, EvoCOP, and EvoMUSART. The 79 revised full papers presented were carefully reviewed and selected from 128 submissions. EvoApplications 2014 consisted of the following 13 tracks: EvoCOMNET (nature-inspired techniques for telecommunication networks and other parallel and distributed systems), EvoCOMPLEX (evolutionary algorithms and complex systems), EvoENERGY (evolutionary computation in energy applications), EvoFIN (evolutionary and natural computation in finance and economics), EvoGAMES (bio-inspired algorithms in games), EvoIASP (evolutionary computation in image analysis, signal processing, and pattern recognition), EvoINDUSTRY (nature-inspired techniques in industrial settings), EvoNUM (bio-inspired algorithms for continuous parameter optimization), EvoPAR (parallel implementation of evolutionary algorithms), EvoRISK (computational intelligence for risk management, security and defence applications), EvoROBOT (evolutionary computation in robotics), EvoSTOC (evolutionary algorithms in stochastic and dynamic environments), and EvoBio (EC and related techniques in bioinformatics and computational biology).