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Technologies and Applications of Artificial Intelligence
Shin-Ming Cheng 2014-11-17 This book constitutes the refereed proceedings of the 19th International Conference on Technologies and Applications of Artificial Intelligence, held in Taipei, Taiwan, in November 2014. The 23 revised full papers, 3 short papers, and 8 workshop papers presented at the international track of the conference were carefully reviewed and selected from overall 93 submissions to the international track, domestic track, and international workshops for inclusion in this volume. The papers feature original research results and practical development experiences among researchers and application developers from the many AI related areas including machine learning, data mining, statistics, computer vision, web intelligence, information retrieval, and computer games.

Fuzzy Portfolio Optimization Pankaj Gupta 2014-03-17 This monograph presents a comprehensive study of portfolio optimization, an important area of quantitative finance. Considering that the information available in financial markets is incomplete and that the markets are affected by vagueness and ambiguity, the
monograph deals with fuzzy portfolio optimization models. At first, the book makes the reader familiar with basic concepts, including the classical mean–variance portfolio analysis. Then, it introduces advanced optimization techniques and applies them for the development of various multi-criteria portfolio optimization models in an uncertain environment. The models are developed considering both the financial and non-financial criteria of investment decision making, and the inputs from the investment experts. The utility of these models in practice is then demonstrated using numerical illustrations based on real-world data, which were collected from one of the premier stock exchanges in India. The book addresses both academics and professionals pursuing advanced research and/or engaged in practical issues in the rapidly evolving field of portfolio optimization.

Advances in Data Mining. Applications and Theoretical Aspects Petra Perner 2018-07-04 This volume constitutes the proceedings of the 18th Industrial Conference on Advances in Data Mining, ICDM 2018, held in New York, NY, USA, in July 2018. The 24 regular papers presented in this book were carefully reviewed and selected from 146 submissions. The topics range from theoretical aspects of data mining to applications of data mining, such as in multimedia data, in marketing, in medicine and agriculture, and in process control, industry, and society.

First International Conference on Sustainable Technologies for Computational Intelligence Ashish Kumar Luhach 2019-11-01 This book gathers high-quality papers presented at the First International Conference on Sustainable Technologies for Computational Intelligence (ICTSCI 2019), which was organized by Sri Balaji College of Engineering and Technology, Jaipur, Rajasthan, India, on March 29–30, 2019. It covers emerging topics in computational intelligence and effective strategies for its implementation in engineering applications.

Advances in Swarm Intelligence Ying Tan 2017-07-18 The two-volume set of LNCS 10385 and 10386, constitutes the proceedings of the 8th International Conference on Advances in Swarm Intelligence, ICSI 2017, held in Fukuoka, Japan, in July/August 2017. The total of 133 papers presented in these volumes was carefully reviewed and selected from 267 submissions. The paper were organized in topical sections as follows: Part I: theories and models of swarm intelligence; novel swarm-based optimization algorithms; particle swarm optimization; applications of particle swarm optimization; ant colony optimization; artificial bee colony algorithms; genetic algorithms; differential evolution; fireworks algorithm; brain storm optimization algorithm; cuckoo search; and firefly algorithm. Part II: multi-objective optimization; portfolio optimization; community detection; multi-agent systems and swarm robotics; hybrid optimization algorithms and applications; fuzzy and swarm approach; clustering and forecast; classification and detection; planning and routing problems; dialog system applications; robotic control; and other applications.

Handbook of Research on Military Expenditure on Economic and Political Resources Das, Ramesh Chandra 2018-05-25 As many countries have increased their budgets to allow for newer technologies and a stronger military force, defense spending has become a popular debate topic around the world. As such, it is vital to understand the interplay between the military expenditure and economic growth and development across countries. The Handbook of
Research on Military Expenditure on Economic and Political Resources is a critical scholarly publication that explores the interplay between the military expenditure and economic growth and development across countries. Featuring coverage on a wide range of topics such as defense management, economic growth, and dynamic panel model, this publication is geared towards academicians, researchers, and professionals seeking current research on the interplay between the military expenditure and economic growth and development across countries.

Advanced Intelligent Computing. Theories and Applications De-Shuang Huang 2010-07-30 The International Conference on Intelligent Computing (ICIC) was formed to provide an annual forum dedicated to the emerging and challenging topics in artificial intelligence, machine learning, pattern recognition, image processing, bioinformatics, and computational biology. It aims to bring together researchers and practitioners from both academia and industry to share ideas, problems, and solutions related to the multifaceted aspects of intelligent computing. ICIC 2010, held in Changsha, China, August 18-21, 2010, constituted the 6th International Conference on Intelligent Computing. It built upon the success of ICIC 2009, ICIC 2008, ICIC 2007, ICIC 2006, and ICIC 2005, that were held in Ulsan, Korea, Shanghai, Qingdao, Kunming and Hefei, China, respectively. This year, the conference concentrated mainly on the theories and methodologies as well as the emerging applications of intelligent computing. Its aim was to unify the picture of contemporary intelligent computing techniques as an integral concept that highlights the trends in advanced computational intelligence and bridges theoretical research with applications. Therefore, the theme for this conference was “Advanced Intelligent Computing Technology and Applications.” Papers focusing on this theme were solicited, addressing theories, methodologies, and applications in science and technology.

Soft Computing: Theories and Applications Tarun K. Sharma 2021-07-30 This book focuses on soft computing and how it can be applied to solve real-world problems arising in various domains, ranging from medicine and healthcare, to supply chain management, image processing and cryptanalysis. It gathers high-quality papers presented at the International Conference on Soft Computing: Theories and Applications (SoCTA 2020), organized online. The book is divided into two volumes and offers valuable insights into soft computing for teachers and researchers alike; the book will inspire further research in this dynamic field.

Advances in Swarm and Computational Intelligence Ying Tan 2015-06-01 This book and its companion volumes, LNCS volumes 9140, 9141 and 9142, constitute the proceedings of the 6th International Conference on Swarm Intelligence, ICSI 2015 held in conjunction with the Second BRICS Congress on Computational Intelligence, CCI 2015, held in Beijing, China in June 2015. The 161 revised full papers presented were carefully reviewed and selected from 294 submissions. The papers are organized in 28 cohesive sections covering all major topics of swarm intelligence and computational intelligence research and development, such as novel swarm-based optimization algorithms and applications; particle swarm optimization; ant colony optimization; artificial bee colony algorithms; evolutionary and genetic algorithms; differential evolution; brain storm optimization algorithm; biogeography based optimization;
cuckoo search; hybrid methods; multi-objective optimization; multi-agent systems and swarm robotics; Neural networks and fuzzy methods; data mining approaches; information security; automation control; combinatorial optimization algorithms; scheduling and path planning; machine learning; blind sources separation; swarm interaction behavior; parameters and system optimization; neural networks; evolutionary and genetic algorithms; fuzzy systems; forecasting algorithms; classification; tracking analysis; simulation; image and texture analysis; dimension reduction; system optimization; segmentation and detection system; machine translation; virtual management and disaster analysis.

Multiple Attribute Decision Making Gwo-Hshiung Tzeng 2011-06-22

Decision makers are often faced with several conflicting alternatives. How do they evaluate trade-offs when there are more than three criteria? To help people make optimal decisions, scholars in the discipline of multiple criteria decision making (MCDM) continue to develop new methods for structuring preferences and determining the correct relative weights for criteria. A compilation of modern decision-making techniques, Multiple Attribute Decision Making: Methods and Applications focuses on the fuzzy set approach to multiple attribute decision making (MADM). Drawing on their experience, the authors bring together current methods and real-life applications of MADM techniques for decision analysis. They also propose a novel hybrid MADM model that combines DEMATEL and analytic network process (ANP) with VIKOR procedures. The first part of the book focuses on the theory of each method and includes examples that can be calculated without a computer, providing a complete understanding of the procedures. Methods include the analytic hierarchy process (AHP), ANP, simple additive weighting method, ELECTRE, PROMETHEE, the gray relational model, fuzzy integral technique, rough sets, and the structural model. Integrating theory and practice, the second part of the book illustrates how methods can be used to solve real-world MADM problems. Applications covered in the book include: AHP to select planning and design services for a construction project TOPSIS and VIKOR to evaluate the best alternative-fuel vehicles for urban areas ELECTRE to solve network design problems in urban transportation planning PROMETEE to set priorities for the development of new energy systems, from solar thermal to hydrogen energy Fuzzy integrals to evaluate enterprise intranet web sites Rough sets to make decisions in insurance marketing Helping readers understand how to apply MADM techniques to their decision making, this book is suitable for undergraduate and graduate students as well as practitioners.

Fuzzy-Like Multiple Objective Multistage Decision Making Jiuping Xu 2014-02-07

Decision has inspired reflection of many thinkers since the ancient times. With the rapid development of science and society, appropriate dynamic decision making has been playing an increasingly important role in many areas of human activity including engineering, management, economy and others. In most real-world problems, decision makers usually have to make decisions sequentially at different points in time and space, at different levels for a component or a system, while facing multiple and conflicting objectives and a hybrid uncertain environment where fuzziness and randomness co-exist in a decision making process. This leads to the development of fuzzy-like multiple objective multistage decision making. This book provides
a thorough understanding of the concepts of dynamic optimization from a modern perspective and presents the state-of-the-art methodology for modeling, analyzing and solving the most typical multiple objective multistage decision making practical application problems under fuzzy-like uncertainty, including the dynamic machine allocation, closed multiclass queueing networks optimization, inventory management, facilities planning and transportation assignment. A number of real-world engineering case studies are used to illustrate in detail the methodology. With its emphasis on problemsolving and applications, this book is ideal for researchers, practitioners, engineers, graduate students and upper-level undergraduates in applied mathematics, management science, operations research, information system, civil engineering, building construction and transportation optimization.

Applying Fuzzy Logic for the Digital Economy and Society
Andreas Meier 2019-02-28 This edited book presents the state-of-the-art of applying fuzzy logic to managerial decision-making processes in areas such as fuzzy-based portfolio management, recommender systems, performance assessment and risk analysis, among others. Presenting the latest research, with a strong focus on applications and case studies, it is a valuable resource for researchers, practitioners, project leaders and managers wanting to apply or improve their fuzzy-based skills.

Optimization of Financial Asset Neutrosophic Portfolios
Marcel-Ioan Boloș The purpose of this paper was to model, with the help of neutrosophic fuzzy numbers, the optimal financial asset portfolios, offering additional information to those investing in the capital market. The optimal neutrosophic portfolios are those categories of portfolios consisting of two or more financial assets, modeled using neutrosophic triangular numbers, that allow for the determination of financial performance indicators, respectively the neutrosophic average, the neutrosophic risk, for each financial asset, and the neutrosophic covariance as well as the determination of the portfolio return, respectively of the portfolio risk.

Advances in Neural Networks -- ISNN 2010
James Kwok 2010-05-30 This book and its sister volume collect refereed papers presented at the 7th International Symposium on Neural Networks (ISNN 2010), held in Shanghai, China, June 6-9, 2010. Building on the success of the previous six successive ISNN symposiums, ISNN has become a well-established series of popular and high-quality conferences on neural computation and its applications. ISNN aims at providing a platform for scientists, researchers, engineers, as well as students to gather together to present and discuss the latest progresses in neural networks, and applications in diverse areas. Nowadays, the field of neural networks has been fostered far beyond the traditional artificial neural networks. This year, ISNN 2010 received 591 submissions from more than 40 countries and regions. Based on rigorous reviews, 170 papers were selected for publication in the proceedings. The papers collected in the proceedings cover a broad spectrum of fields, ranging from neurophysiological experiments, neural modeling to extensions and applications of neural networks. We have organized the papers into two volumes based on their topics. The first volume, entitled "Advances in Neural Networks- ISNN 2010, Part 1," covers the following topics: neurophysiological foundation, theory and models, learning and inference, neurodynamics. The second volume entitled "Advance in
Neural Networks ISNN 2010, Part 2" covers the following five topics: SVM and kernel methods, vision and image, data mining and text analysis, BCI and brain imaging, and applications.

**Uncertain Portfolio Optimization** Zhongfeng Qin
2016-09-16 This book provides a new modeling approach for portfolio optimization problems involving a lack of sufficient historical data. The content mainly reflects the author’s extensive work on uncertainty portfolio optimization in recent years. Considering security returns as different variables, the book presents a series of portfolio optimization models in the framework of credibility theory, uncertainty theory and chance theory, respectively. As such, it offers readers a comprehensive and up-to-date guide to uncertain portfolio optimization models.

**New Concepts and Trends of Hybrid Multiple Criteria Decision Making** Gwo-Hshiung Tzeng 2017-08-15 When people or computers need to make a decision, typically multiple conflicting criteria need to be evaluated; for example, when we buy a car, we need to consider safety, cost and comfort. Multiple criteria decision making (MCDM) has been researched for decades. Now as the rising trend of big-data analytics in supporting decision making, MCDM can be more powerful when combined with state-of-the-art analytics and machine learning. In this book, the authors introduce a new framework of MCDM, which can lead to more accurate decision making. Several real-world cases will be included to illustrate the new hybrid approaches.

**Progress in Intelligent Decision Science** Tofig Tofig Allahviranloo 2021-01-29 This book contains the topics of artificial intelligence and deep learning that do have much application in real-life problems. The concept of uncertainty has long been used in applied science, especially decision making and a logical decision must be made in the field of uncertainty or in the real-life environment that is formed and combined with vague concepts and data. The chapters of this book are connected to the new concepts and aspects of decision making with uncertainty. Besides, other chapters are involved with the concept of data mining and decision making under uncertain computations.

**Proceedings of the International Conference on Computational Intelligence and Sustainable Technologies** Kedar Nath Das 2022 This book presents the collection of the accepted research papers presented in the 1st International Conference on Computational Intelligence and Sustainable Technologies (ICO-CIST-2021). This edited book contains the articles related to the themes on artificial intelligence in machine learning, big data analysis, soft computing techniques, pattern recognitions, sustainable infrastructural development, sustainable grid computing and innovative technology for societal development, renewable energy, and innovations in Internet of Things (IoT).

**Metaheuristic Approaches to Portfolio Optimization** Ray, Jhuma 2019-06-22 Control of an impartial balance between risks and returns has become important for investors, and having a combination of financial instruments within a portfolio is an advantage. Portfolio management has thus become very important for reaching a resolution in high-risk investment opportunities and addressing the risk-reward tradeoff by maximizing returns and minimizing risks within a given investment period for a variety of assets. Metaheuristic Approaches to Portfolio Optimization is an essential reference source that examines the proper selection of financial instruments
in a financial portfolio management scenario in terms of metaheuristic approaches. It also explores common measures used for the evaluation of risks/returns of portfolios in real-life situations. Featuring research on topics such as closed-end funds, asset allocation, and risk-return paradigm, this book is ideally designed for investors, financial professionals, money managers, accountants, students, professionals, and researchers.

**Portfolio Optimization Using Fundamental Indicators Based on Multi-Objective EA**  
Antonio Daniel Silva  
2016-02-11 This work presents a new approach to portfolio composition in the stock market. It incorporates a fundamental approach using financial ratios and technical indicators with a Multi-Objective Evolutionary Algorithms to choose the portfolio composition with two objectives the return and the risk. Two different chromosomes are used for representing different investment models with real constraints equivalents to the ones faced by managers of mutual funds, hedge funds, and pension funds. To validate the present solution two case studies are presented for the SP500 for the period June 2010 until end of 2012. The simulations demonstrates that stock selection based on financial ratios is a combination that can be used to choose the best companies in operational terms, obtaining returns above the market average with low variances in their returns. In this case the optimizer found stocks with high return on investment in a conjunction with high rate of growth of the net income and a high profit margin. To obtain stocks with high valuation potential it is necessary to choose companies with a lower or average market capitalization, low PER, high rates of revenue growth and high operating leverage.

**Intelligent Systems**  
André Britto 2021-11-27 The two-volume set LNAI 13073 and 13074 constitutes the proceedings of the 10th Brazilian Conference on Intelligent Systems, BRACIS 2021, held in São Paulo, Brazil, in November-December 2021. The total of 77 papers presented in these two volumes was carefully reviewed and selected from 192 submissions. The contributions are organized in the following topical sections: Part I: Agent and Multi-Agent Systems, Planning and Reinforcement Learning; Evolutionary Computation, Metaheuristics, Constrains and Search, Combinatorial and Numerical Optimization, Knowledge Representation, Logic and Fuzzy Systems; Machine Learning and Data Mining. Part II: Multidisciplinary Artificial and Computational Intelligence and Applications; Neural Networks, Deep Learning and Computer Vision; Text Mining and Natural Language Processing. Due to the COVID-2019 pandemic, BRACIS 2021 was held as a virtual event.

**Advances in Swarm Intelligence**  
Ying Tan 2017-07-18 The two-volume set of LNCS 10385 and 10386, constitutes the proceedings of the 8th International Confrence on Advances in Swarm Intelligence, ICSI 2017, held in Fukuoka, Japan, in July/August 2017. The total of 133 papers presented in these volumes was carefully reviewed and selected from 267 submissions. The paper were organized in topical sections as follows: Part I: theories and models of swarm intelligence; novel swarm-based optimization algorithms; particle swarm optimization; applications of particle swarm optimization; ant colony optimization; artificial bee colony algorithms; genetic algorithms; differential evolution; fireworks algorithm; brain storm optimization algorithm; cuckoo searh; and firefly algorithm. Part II: multi-objective optimization; portfolio optimization;
community detection; multi-agent systems and swarm robotics; hybrid optimization algorithms and applications; fuzzy and swarm approach; clustering and forecast; classification and detection; planning and routing problems; dialog system applications; robotic control; and other applications.

**Recent Advances on Hybrid Approaches for Designing Intelligent Systems**

Oscar Castillo 2014-03-26

This book describes recent advances on hybrid intelligent systems using soft computing techniques for diverse areas of application, such as intelligent control and robotics, pattern recognition, time series prediction and optimization complex problems. Soft Computing (SC) consists of several intelligent computing paradigms, including fuzzy logic, neural networks and bio-inspired optimization algorithms, which can be used to produce powerful hybrid intelligent systems. The book is organized in five main parts, which contain a group of papers around a similar subject. The first part consists of papers with the main theme of type-2 fuzzy logic, which basically consists of papers that propose new models and applications for type-2 fuzzy systems. The second part contains papers with the main theme of bio-inspired optimization algorithms, which are basically papers using nature-inspired techniques to achieve optimization of complex optimization problems in diverse areas of application. The third part contains papers that deal with new models and applications of neural networks in real world problems. The fourth part contains papers with the theme of intelligent optimization methods, which basically consider the proposal of new methods of optimization to solve complex real world optimization problems. The fifth part contains papers with the theme of evolutionary methods and intelligent computing, which are papers considering soft computing methods for applications related to diverse areas, such as natural language processing, recommending systems and optimization.

**Advances in Edge Computing: Massive Parallel Processing and Applications**

F. Xhafa 2020-03-10

The rapid advance of Internet of Things (IoT) technologies has resulted in the number of IoT-connected devices growing exponentially, with billions of connected devices worldwide. While this development brings with it great opportunities for many fields of science, engineering, business and everyday life, it also presents challenges such as an architectural bottleneck – with a very large number of IoT devices connected to a rather small number of servers in Cloud data centers – and the problem of data deluge. Edge computing aims to alleviate the computational burden of the IoT for the Cloud by pushing some of the computations and logics of processing from the Cloud to the Edge of the Internet. It is becoming commonplace to allocate tasks and applications such as data filtering, classification, semantic enrichment and data aggregation to this layer, but to prevent this new layer from itself becoming another bottleneck for the whole computing stack from IoT to the Cloud, the Edge computing layer needs to be capable of implementing massively parallel and distributed algorithms efficiently. This book, Advances in Edge Computing: Massive Parallel Processing and Applications, addresses these challenges in 11 chapters. Subjects covered include: Fog storage software architecture; IoT-based crowdsourcing; the industrial Internet of Things; privacy issues; smart home management in the Cloud and the Fog; and a cloud robotic solution to assist medical applications. Providing an overview of developments in
the field, the book will be of interest to all those working with the Internet of Things and Edge computing. Safety and Reliability – Safe Societies in a Changing World Stein Haugen 2018-06-15 Safety and Reliability – Safe Societies in a Changing World collects the papers presented at the 28th European Safety and Reliability Conference, ESREL 2018 in Trondheim, Norway, June 17-21, 2018. The contributions cover a wide range of methodologies and application areas for safety and reliability that contribute to safe societies in a changing world. These methodologies and applications include: - foundations of risk and reliability assessment and management - mathematical methods in reliability and safety - risk assessment - risk management - system reliability - uncertainty analysis - digitalization and big data - prognostics and system health management - occupational safety - accident and incident modeling - maintenance modeling and applications - simulation for safety and reliability analysis - dynamic risk and barrier management - organizational factors and safety culture - human factors and human reliability - resilience engineering - structural reliability - natural hazards - security - economic analysis in risk management Safety and Reliability – Safe Societies in a Changing World will be invaluable to academics and professionals working in a wide range of industrial and governmental sectors: offshore oil and gas, nuclear engineering, aeronautics and aerospace, marine transport and engineering, railways, road transport, automotive engineering, civil engineering, critical infrastructures, electrical and electronic engineering, energy production and distribution, environmental engineering, information technology and telecommunications, insurance and finance, manufacturing, marine transport, mechanical engineering, security and protection, and policy making. Advanced Methodologies and Technologies in Business Operations and Management Khosrow-Pour, D.B.A., Mehdi 2018-09-14 Businesses consistently work on new projects, products, and workflows to remain competitive and successful in the modern business environment. To remain zealous, businesses must employ the most effective methods and tools in human resources, project management, and overall business plan execution as competitors work to succeed as well. Advanced Methodologies and Technologies in Business Operations and Management provides emerging research on business tools such as employee engagement, payout policies, and financial investing to promote operational success. While highlighting the challenges facing modern organizations, readers will learn how corporate social responsibility and utilizing artificial intelligence improve a company’s culture and management. This book is an ideal resource for executives and managers, researchers, accountants, and financial investors seeking current research on business operations and management. Recent Advances in Theory and Methods for the Analysis of High Dimensional and High Frequency Financial Data Norman R. Swanson 2021-08-31 Recently, considerable attention has been placed on the development and application of tools useful for the analysis of the high-dimensional and/or high-frequency datasets that now dominate the landscape. The purpose of this Special Issue is to collect both methodological and empirical papers that develop and utilize state-of-the-art econometric techniques for the analysis of such data. Multicriteria and Optimization Models for Risk,
Reliability, and Maintenance Decision Analysis  Adiel Teixeira de Almeida 2022-06-28 This book considers a broad range of areas from decision making methods applied in the contexts of Risk, Reliability and Maintenance (RRM). Intended primarily as an update of the 2015 book Multicriteria and Multiobjective Models for Risk, Reliability and Maintenance Decision Analysis, this edited work provides an integration of applied probability and decision making. Within applied probability, it primarily includes decision analysis and reliability theory, amongst other topics closely related to risk analysis and maintenance. In decision making, it includes multicriteria decision making/aiding (MCDM/A) methods and optimization models. Within MCDM, in addition to decision analysis, some of the topics related to mathematical programming areas are considered, such as multiobjective linear programming, multiobjective nonlinear programming, game theory and negotiations, and multiobjective optimization. Methods related to these topics have been applied to the context of RRM. In MCDA, several other methods are considered, such as outranking methods, rough sets and constructive approaches. The book addresses an innovative treatment of decision making in RRM, improving the integration of fundamental concepts from both areas of RRM and decision making. This is accomplished by presenting current research developments in decision making on RRM. Some pitfalls of decision models on practical applications on RRM are discussed and new approaches for overcoming those drawbacks are presented.

Applications of Management Science  Kenneth D. Lawrence 2017-05-08 Section one is focused on multi-criteria decision applications, the second on supply chain management and finally authors look at productivity analysis. Thus this volume will be of interest to those involved in the applications of these methods, in a realistic managerial problem solving environment through the use of management science modeling.

Recent Advances on Soft Computing and Data Mining  Tutut Herawan 2014-05-29 This book constitutes the refereed proceedings of the First International Conference on Soft Computing and Data Mining, SCDM 2014, held in Universiti Tun Hussein Onn Malaysia, in June 16th-18th, 2014. The 65 revised full papers presented in this book were carefully reviewed and selected from 145 submissions, and organized into two main topical sections; Data Mining and Soft Computing. The goal of this book is to provide both theoretical concepts and, especially, practical techniques on these exciting fields of soft computing and data mining, ready to be applied in real-world applications. The exchanges of views pertaining future research directions to be taken in this field and the resultant dissemination of the latest research findings makes this work of immense value to all those having an interest in the topics covered.

New Concepts and Trends of Hybrid Multiple Criteria Decision Making  Gwo-Hshiung Tzeng 2017-08-15 When people or computers need to make a decision, typically multiple conflicting criteria need to be evaluated; for example, when we buy a car, we need to consider safety, cost and comfort. Multiple criteria decision making (MCDM) has been researched for decades. Now as the rising trend of big-data analytics in supporting decision making, MCDM can be more powerful when combined with state-of-the-art analytics and machine learning. In this book, the authors introduce a new framework of MCDM, which can lead to more accurate decision making. Several real-
world cases will be included to illustrate the new hybrid approaches. 

**Advanced Data Mining and Applications** Gao Cong

2017-10-30 This book constitutes the refereed proceedings of the 13th International Conference on Advanced Data Mining and Applications, ADMA 2017, held in Singapore in November 2017. The 20 full and 38 short papers presented in this volume were carefully reviewed and selected from 118 submissions. The papers were organized in topical sections named: database and distributed machine learning; recommender system; social network and social media; machine learning; classification and clustering methods; behavior modeling and user profiling; bioinformatics and medical data analysis; spatio-temporal data; natural language processing and text mining; data mining applications; applications; and demos.

**Multi-Period Trading Via Convex Optimization** Stephen Boyd 2017-07-28 This monograph collects in one place the basic definitions, a careful description of the model, and discussion of how convex optimization can be used in multi-period trading, all in a common notation and framework.

**Advances in Intelligent Computing** J. K. Mandal 2018-05-18 This edited volume on computational intelligence algorithms-based applications includes work presented at the International Conference on Computational Intelligence, Communications, and Business Analytics (CICBA 2017). It provides the latest research findings on the significance of computational intelligence and related application areas. It also introduces various computation platforms involving evolutionary algorithms, fuzzy logic, swarm intelligence, artificial neural networks and several other tools for solving real-world problems. It also discusses various tools that are hybrids of more than one solution framework, highlighting the theoretical aspects as well as various real-world applications.

**Effective Investments on Capital Markets** Waldemar Tarczyński 2019-07-17 This proceedings volume presents current research and innovative solutions into capital markets, particularly in Poland. Featuring contributions presented at the 10th Capital Market Effective Investments (CMEI 2018) conference held in Międzyzdroje, Poland, this book explores the future of capital markets in Poland as well as comparing it with the capital markets of other developed regions around the world. Divided into four parts, the enclosed papers provide a background into the theoretical foundations of capital market investments, explores different approaches—both classical and contemporary—to investment decision making, analyzes the behaviors of investors using experimental economics and behavioral finance, and explores practical issues related to financial market investments, including real case studies. In addition, each part of the book begins with an introductory chapter written by thematic editors that provides an outline of the subject area and a summary of the papers presented.

**Financial Service: Banking and Finance** Musa Gün 2020-12-25 Finance and banking sector has had to adopt a new customer-oriented approach and go beyond traditional practices in the face of rapid changes in technology and increasing competition. Technological development, which is the pioneer of change, brings the financial system to a new level as in every field of economy. Written in these directions, this book includes current debates in the field of banking and finance. Especially the rapid
entry of blockchain technology into all areas of life has caused serious changes in corporate governance mechanisms. In this context, the content of the book answers the question of why corporate governance matters a problem for the banking sector with theoretical aspects. And at the same time, it empirically discusses measures of the potential market value effects of the blockchain systems integration into corporate governance procedures. Along with these, the banking sector, which constitutes an important part of the financial system, has become more significant after the global mortgage crisis. The evaluation of the banking sector, which is structurally different from other sectors, requires a separate approach. The content of the book draws an overall picture that can be used for banks in terms of valuation methods. Additionally, the determinants of the financial performance of banks, which are the main components of the financial system, are analysed specifically in the Turkish banking sector. On the other hand, financial problems such as portfolio optimization, which is one of the important topics of financial decisions, and its applications are examined specifically for the Turkish stock market. Approaches and new methods of optimization are tested. Fuzzy Portfolio Optimization Yong Fang 2008-09-20 Most of the existing portfolio selection models are based on the probability theory. Though they often deal with the uncertainty via probabilistic approaches, we have to mention that the probabilistic approaches only partly capture the reality. Some other techniques have also been applied to handle the uncertainty of the financial markets, for instance, the fuzzy set theory [Zadeh (1965)]. In reality, many events with fuzziness are characterized by probabilistic approaches, although they are not random events. The fuzzy set theory has been widely used to solve many practical problems, including financial risk management. By using fuzzy mathematical approaches, quan-tative analysis, qualitative analysis, the experts’ knowledge and the investors’ subjective opinions can be better integrated into a portfolio selection model. The contents of this book mainly comprise of the authors’ research results for fuzzy portfolio selection problems in recent years. In addition, in the book, the authors will also introduce some other important progress in the field of fuzzy portfolio optimization. Some fundamental issues and problems of portfolio selection have been studied systematically and extensively by the authors to apply fuzzy systems theory and optimization methods. A new framework for investment analysis is presented in this book. A series of portfolio selection models are given and some of them might be more efficient for practical applications. Some application examples are given to illustrate these models by using real data from the Chinese securities markets. Advances in Swarm Intelligence Ying Tan 2016-07-07 This two-volume set LNCS 9712 and LNCS 9713 constitutes the refereed proceedings of the 7th International Conference on Swarm Intelligence, ICSI 2016, held in Bali, Indonesia, in June 2016. The 130 revised regular papers presented were carefully reviewed and selected from 231 submissions. The papers are organized in 22 cohesive sections covering major topics of swarm intelligence and related areas such as trend and models of swarm intelligence research; novel swarm-based optimization algorithms; swarming behaviour; some swarm intelligence algorithms and their applications; hybrid search
optimization; particle swarm optimization; PSO
applications; ant colony optimization; brain storm
optimization; fireworks algorithms; multi-objective
optimization; large-scale global optimization;
bioinformatics; scheduling and planning; machine learning
methods; clustering algorithm; classification; image
classification and encryption; data mining; sensor
networks and social networks; neural networks; swarm
techniques for intelligent control and robotics, pattern
optimization; ant colony optimization; brain storm
optimization; fireworks algorithms; multi-objective
optimization; large-scale global optimization;
bioinformatics; scheduling and planning; machine learning
methods; clustering algorithm; classification; image
classification and encryption; data mining; sensor
networks and social networks; neural networks; swarm
intelligence in management decision making and
operations research; robot control; swarm robotics;
intelligent energy and communications systems; and
intelligent and interactive and tutoring systems.

Recent Advances on Hybrid Intelligent Systems
Oscar Castillo 2012-09-14 This book presents recent advances
on hybrid intelligent systems using soft computing
techniques for intelligent control and robotics, pattern
recognition, time series prediction and optimization of
complex problems. Soft Computing (SC) consists of
several intelligent computing paradigms, including fuzzy
logic, neural networks, and bio-inspired optimization
algorithms, which can be used to produce powerful hybrid
intelligent systems. The book is organized in five main
parts, which contain groups of papers around a similar
subject. The first part consists of papers with the main
theme of hybrid intelligent systems for control and
robotics, which are basically state of the art papers
that propose new models and concepts, which can be the
basis for achieving intelligent control and mobile
robotics. The second part contains papers with the main
theme of hybrid intelligent systems for pattern
recognition and time series prediction, which are
basically papers using nature-inspired techniques, like
evolutionary algorithms, fuzzy logic and neural
networks, for achieving efficient pattern recognition or
time series prediction. The third part contains papers
with the theme of bio-inspired and genetic optimization
methods, which basically consider the proposal of new
methods and applications of bio-inspired optimization to
solve complex optimization of real problems. The fourth
part contains papers that deal with the application of
intelligent optimization techniques in real world
problems in scheduling, planning and manufacturing. The
fifth part contains papers with the theme of
evolutionary methods and intelligent computing, which
are papers considering soft computing methods for
applications related to diverse areas, such as natural
language processing, recommending systems and
optimization.

A Multi Objective Programming Approach to Solve Integer
Valued Neutrosophic Shortest Path Problems
Ranjan Kumar
Neutrosophic (NS) set hypothesis gives another way to
deal with the vulnerabilities of the shortest path
problems (SPP). Several researchers have worked on fuzzy
shortest path problem (FSPP) in a fuzzy graph with
vulnerability data and completely different applications
in real world eventualities. However, the uncertainty
related to the inconsistent information and
indeterminate information isn't properly expressed by
fuzzy set.