
Read Online A Stock Pattern Recognition Algorithm Based On Neural Networks

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Stock Market Pattern Recognition Algorithm

Classification Algorithm

LAP Lambert Academic Publishing Data mining is the process of extracting patterns from data. Stock Market Pattern recognition is a very active research area which overlaps with various other research fields such as Machine Learning, Data Mining, Probability Theory, Algebra and Calculus. In recent years the concept of data mining has emerged as one of them. The main focus of the experiment is on the mining algorithms to analyze a much accurate and efficient algorithm. Data mining is becoming an increasingly important tool to transform these data into information. It is commonly used in a wide range of profiling practices, such as marketing, surveillance, fraud detection and scientific discovery. Time series is used for prediction for value. Different classifier method has been analyzed. First, in this project we are interested in the comparison of the quality of different mining algorithms. Data mining can be defined as an activity that extracts some new nontrivial information contained in large databases.

Technical Analysis for Algorithmic Pattern Recognition

Springer The main purpose of this book is to resolve deficiencies and limitations that currently exist when using Technical Analysis (TA). Particularly, TA is being used either by academics as an "economic test" of the weak-form Efficient Market Hypothesis (EMH) or by practitioners as a main or supplementary tool for deriving trading signals. This book approaches TA in a systematic way utilizing all the available estimation theory and tests. This is achieved through the developing of novel rule-based pattern recognizers, and the implementation of statistical tests for assessing the importance of realized returns. More emphasis is given to technical patterns where subjectivity in their identification process is apparent. Our proposed methodology is based on the algorithmic and thus unbiased pattern recognition. The unified methodological framework presented in this book can serve as a benchmark for both future academic studies that test the null hypothesis of the weak-form EMH and for practitioners that want to embed TA within their trading/investment decision making processes.

The Predictive Power of 'Head-and-Shoulders' Price Patterns in the U.S. Stock Market

We use the pattern recognition algorithm of Lo et al. (2000) with some modifications to determine whether "head-and-shoulders" price patterns have predictive power for future stock returns. The modifications include the use of filters based on typical price patterns identified by a technical analyst. With data from the S&P 500 and the Russell 2000 over the period 1990-1999 we find little or no support for the profitability of a stand-alone trading strategy. But we do find strong evidence that the pattern had power to predict excess returns. Risk-adjusted excess returns to a trading strategy conditioned on "head-and-shoulders" price patterns are 5-7 percent per year. Combining the strategy with the market portfolio produces a significant increase in excess return for a fixed level of risk exposure.

Nostradamus: Modern Methods of Prediction, Modeling and Analysis of Nonlinear Systems

Springer Science & Business Media This proceeding book of Nostradamus conference (<http://nostradamus-conference.org>) contains accepted papers presented at this event in 2012. Nostradamus conference was held in the one of the biggest and historic city of Ostrava (the Czech Republic, <http://www.ostrava.cz/en>), in September 2012. Conference topics are focused on classical as well as modern methods for prediction of dynamical systems with applications in science, engineering and economy. Topics are (but not limited to): prediction by classical and novel methods, predictive control, deterministic chaos and its control, complex systems, modelling and prediction of its dynamics and much more.

Information Security and Assurance

4th International Conference, ISA 2010, Miyazaki, Japan, June 23-25, 2010, Proceedings

Springer Science & Business Media Advanced Science and Technology, Advanced Communication and Networking, Information Security and Assurance, Ubiquitous Computing and Multimedia Applications are conferences that attract many academic and industry professionals. The goal of these co-located conferences is to bring together researchers from academia and industry as well as practitioners to share ideas, problems and solutions relating to the multifaceted aspects of advanced science and technology, advanced communication and networking, information security and assurance, ubiquitous computing and multimedia applications. This co-located event included the following conferences: AST 2010 (The second International Conference on Advanced Science and Technology), ACN 2010 (The second International Conference on Advanced Communication and Networking), ISA 2010 (The 4th International Conference on Information Security and Assurance) and UCMA 2010 (The 2010 International Conference on Ubiquitous Computing and Multimedia Applications). We would like to express our gratitude to all of the authors of submitted papers and to all attendees, for their contributions and participation. We believe in the need for continuing this undertaking in the future. We acknowledge the great effort of all the Chairs and the members of advisory boards and Program Committees of the above-listed events, who selected 15% of over 1,000 submissions, following a rigorous peer-review process. Special thanks go to SERSC (Science & Engineering Research Support Society) for supporting these - located conferences.

Soft Computing Models in Industrial and Environmental Applications

7th International Conference, SOCO'12, Ostrava, Czech Republic, September 5th-7th, 2012

Springer Science & Business Media This volume of Advances in Intelligent and Soft Computing contains accepted papers presented at SOCO 2012, held in the beautiful and historic city of Ostrava (Czech Republic), in September 2012. Soft computing represents a collection or set of computational techniques in machine learning, computer science and some engineering disciplines, which investigate, simulate, and analyze very complex issues and phenomena. After a thorough peer-review process, the SOCO 2012 International Program Committee selected 75 papers which are published in these conference proceedings, and represents an acceptance rate of 38%. In this relevant edition a special emphasis was put on the organization of special sessions. Three special sessions were organized related to relevant topics as: Soft computing models for Control Theory & Applications in Electrical

Engineering, Soft computing models for biomedical signals and data processing and Advanced Soft Computing Methods in Computer Vision and Data Processing. The selection of papers was extremely rigorous in order to maintain the high quality of the conference and we would like to thank the members of the Program Committees for their hard work in the reviewing process. This is a crucial process to the creation of a high standard conference and the SOCO conference would not exist without their help.

Candlestick Forecasting for Investments

Applications, Models and Properties

Routledge Candlestick charts are often used in speculative markets to describe and forecast asset price movements. This book is the first of its kind to investigate candlestick charts and their statistical properties. It provides an empirical evaluation of candlestick forecasting. The book proposes a novel technique to obtain the statistical properties of candlestick charts. The technique, which is known as the range decomposition technique, shows how security price is approximately logged into two ranges, i.e. technical range and Parkinson range. Through decomposition-based modeling techniques and empirical datasets, the book investigates the power of, and establishes the statistical foundation of, candlestick forecasting.

Business Intelligence and Performance Management

Theory, Systems and Industrial Applications

Springer Science & Business Media During the 21st century business environments have become more complex and dynamic than ever before. Companies operate in a world of change influenced by globalisation, volatile markets, legal changes and technical progress. As a result, they have to handle growing volumes of data and therefore require fast storage, reliable data access, intelligent retrieval of information and automated decision-making mechanisms, all provided at the highest level of service quality. Successful enterprises are aware of these challenges and efficiently respond to the dynamic environment in which their business operates. Business Intelligence (BI) and Performance Management (PM) offer solutions to these challenges and provide techniques to enable effective business change. The important aspects of both topics are discussed within this state-of-the-art volume. It covers the strategic support, business applications, methodologies and technologies from the field, and explores the benefits, issues and challenges of each. Issues are analysed from many different perspectives, ranging from strategic management to data technologies, and the different subjects are complimented and illustrated by numerous examples of industrial applications. Contributions are authored by leading academics and practitioners representing various universities, research centres and companies worldwide. Their experience covers multiple disciplines and industries, including finance, construction, logistics, and public services, amongst others. Business Intelligence and Performance Management is a valuable source of reference for graduates approaching MSc or PhD programs and for professionals in industry researching in the fields of BI and PM for industrial application.

Knowledge Science, Engineering and Management

Second International Conference, KSEM 2007, Melbourne, Australia, November 28-30, 2007, Proceedings

Springer This book constitutes the refereed proceedings of the Second International Conference on Knowledge Science, Engineering and Management, KSEM 2007, held in Melbourne, Australia, in November 2007. The 42 revised full papers and 28 revised short papers presented together with five invited talks were carefully reviewed and selected. The papers provide new ideas and report research results in the broad areas of knowledge science, knowledge engineering, and knowledge management.

Advanced Intelligent Technologies for Industry

Proceedings of 2nd International Conference on Advanced Intelligent Technologies (ICAIT 2021)

Springer Nature The book includes new research results of scholars from the Second International Conference on Advanced Intelligent Technologies (ICAIT 2021) subtitled Intelligent Technology and Industry organized by IRNet International Academic Communication Center, held during October 15-17, 2021. The book covers research work from active researchers who are working on collaboration of industry and various intelligent technologies such as intelligent technologies applicable/applied to manufacturing and distribution of industrial products, factory automation, business, etc. The book focuses on theory, design, development, testing, and evaluation of all intelligent technologies applicable/applied to various parts of industry and its infrastructure. The topics included are all computational intelligence techniques applicable/applied to industry, intelligent techniques in data science applicable/applied to business and management, intelligent network systems applicable/applied to industrial production, intelligent technologies applicable to smart agriculture, and intelligent information systems for agriculture.

Human Interface and the Management of Information. Visual Information and Knowledge Management

Thematic Area, HIMI 2019, Held as Part of the 21st HCI International Conference, HCII 2019, Orlando, FL, USA, July 26–31, 2019, Proceedings, Part I

Springer This two-volume set LNCS 11569 and 11570 constitutes the refereed proceedings of the Thematic Area on Human Interface and the Management of Information, HIMI 2019, held as part of HCI International 2019 in Orlando, FL, USA. HCII 2019 received a total of 5029 submissions, of which 1275 papers and 209 posters were accepted for publication after a careful reviewing process. The 91 papers presented in the two volumes were organized in topical sections named: Visual information; Data visualization and analytics; Information, cognition and learning; Information, empathy and persuasion; Knowledge management and sharing; Haptic and tactile interaction; Information in virtual and augmented reality; Machine learning and intelligent systems; Human motion and expression recognition and tracking; Medicine, healthcare and quality of life applications.

Advances in Economics and Econometrics

Theory and Applications, Eighth World Congress

Cambridge University Press Sample Text

Cross-Disciplinary Applications of Artificial Intelligence and Pattern Recognition: Advancing Technologies

Advancing Technologies

IGI Global The need for intelligent machines in areas such as medical diagnostics, biometric security systems, and image processing motivates researchers to develop and explore new techniques, algorithms, and applications in this evolving field. *Cross-Disciplinary Applications of Artificial Intelligence and Pattern Recognition: Advancing Technologies* provides a common platform for researchers to present theoretical and applied research findings for enhancing and developing intelligent systems. Through its discussions of advances in and applications of pattern recognition technologies and artificial intelligence, this reference highlights core concepts in biometric imagery, feature recognition, and other related fields, along with their applicability.

Scalable Pattern Recognition Algorithms

Applications in Computational Biology and Bioinformatics

Springer Science & Business Media This book addresses the need for a unified framework describing how soft computing and machine learning techniques can be judiciously formulated and used in building efficient pattern recognition models. The text reviews both established and cutting-edge research, providing a careful balance of theory, algorithms, and applications, with a particular emphasis given to applications in computational biology and bioinformatics. Features: integrates different soft computing and machine learning methodologies with pattern recognition tasks; discusses in detail the integration of different techniques for handling uncertainties in decision-making and efficiently mining large biological datasets; presents a particular emphasis on real-life applications, such as microarray expression datasets and magnetic resonance images; includes numerous examples and experimental results to support the theoretical concepts described; concludes each chapter with directions for future research and a comprehensive bibliography.

Structural, Syntactic, and Statistical Pattern Recognition

Joint IAPR International Workshop, SSPR & SPR 2012, Hiroshima, Japan, November 7-9, 2012, Proceedings

Springer This volume constitutes the refereed proceedings of the Joint IAPR International Workshops on Structural and Syntactic Pattern Recognition (SSPR 2012) and Statistical Techniques in Pattern Recognition (SPR 2012), held in Hiroshima, Japan, in November 2012 as a satellite event of the 21st International Conference on Pattern Recognition, ICPR 2012. The 80 revised full papers presented together with 1 invited paper and the Pierre Devijver award lecture were carefully reviewed and selected from more than 120 initial submissions. The papers are organized in topical sections on structural, syntactical, and statistical pattern recognition, graph and tree methods, randomized methods and image analysis, kernel methods in structural and syntactical pattern recognition, applications of structural and syntactical pattern recognition, clustering, learning, kernel methods in statistical pattern recognition, kernel methods in statistical pattern recognition, as well as applications of structural, syntactical, and statistical methods.

Pattern Recognition in Bioinformatics

4th IAPR International Conference, PRIB 2009, Sheffield, UK, September 7-9, 2009, Proceedings

Springer Science & Business Media This book constitutes the refereed proceedings of the Fourth International Workshop on Pattern Recognition in Bioinformatics, PRIB 2009, held in Sheffield, UK, in September 2009. The 38 revised full papers presented were carefully reviewed and selected from numerous submissions. The topics covered by these papers range from image analysis for biomedical data to systems biology. The conference aims at creating a focus for the development and application of pattern recognition techniques in the biological domain.

Hybrid Methods in Pattern Recognition

World Scientific The field of pattern recognition has seen enormous progress since its beginnings almost 50 years ago. A large number of different approaches have been proposed. Hybrid methods aim at combining the advantages of different paradigms within a single system. *Hybrid Methods in Pattern Recognition* is a collection of articles describing recent progress in this emerging field. It covers topics such as the combination of neural nets with fuzzy systems or hidden Markov models, neural networks for the processing of symbolic data structures, hybrid methods in data mining, the combination of symbolic and subsymbolic learning, and so on. Also included is recent work on multiple classifier systems. Furthermore, the book deals with applications in on-line and off-line handwriting recognition, remotely sensed image interpretation, fingerprint identification, and automatic text categorization.

Statistical Pattern Recognition

John Wiley & Sons Statistical pattern recognition is a very active area of study and research, which has seen many advances in recent years. New and emerging applications - such as data mining, web searching, multimedia data retrieval, face recognition, and cursive handwriting recognition - require robust and efficient pattern recognition techniques. Statistical decision making and estimation are regarded as fundamental to the study of pattern recognition. *Statistical Pattern Recognition, Second Edition* has been fully updated with new methods, applications and references. It provides a comprehensive introduction to this vibrant area - with material drawn from engineering, statistics, computer science and the social sciences - and covers many application areas, such as database design, artificial neural networks, and decision support systems. * Provides a self-contained introduction to statistical pattern recognition. * Each technique described is illustrated by real examples. * Covers Bayesian methods, neural networks, support vector machines, and unsupervised classification. * Each section concludes with a description of the applications that have been addressed and with further developments of the theory. * Includes background material on dissimilarity, parameter estimation, data, linear algebra and probability. * Features a variety of exercises, from 'open-book' questions to more lengthy projects. The book is aimed primarily at senior undergraduate and graduate students studying statistical pattern recognition, pattern processing, neural networks, and data mining, in both statistics and engineering departments. It is also an excellent source of reference for technical professionals working in advanced information development environments.

Trust, Privacy and Security in Digital Business

18th International Conference, TrustBus 2021, Virtual Event, September 27–30, 2021, Proceedings

Springer Nature This volume LNCS 12927 constitutes the papers of the 18th International Conference on Trust, Privacy and Security in Digital Business, TrustBus 2021, held in September 2021 as part of the DEXA 2021 conference. The event was held virtually due to COVID-19 pandemic. The 11 full papers presented were carefully reviewed and selected from 30 submissions regarding advancements in the state of the art and practice of trust and privacy in digital business. The papers are organized in topical sections: Trust Evaluation; Security Risks; Web Security; Data Protection and Privacy Controls; and Privacy and Users

Advanced Trading Rules

Elsevier Advanced Trading Rules is the essential guide to state of the art techniques currently used by the very best financial traders, analysts and fund managers. The editors have brought together the world's leading professional and academic experts to explain how to understand, develop and apply cutting edge trading rules and systems. It is indispensable reading if you are involved in the derivatives, fixed income, foreign exchange and equities markets. *Advanced Trading Rules* demonstrates how to apply econometrics, computer modelling, technical and quantitative analysis to generate superior returns, showing how you can stay ahead of the curve by finding out why certain methods succeed or fail. Profit from this book by understanding how to use: stochastic properties of trading strategies; technical indicators; neural networks; genetic algorithms; quantitative techniques; charts. Financial markets professionals will discover a wealth of applicable ideas and methods to help them to improve their performance and profits. Students and academics working in this area will also benefit from the rigorous and theoretically sound analysis of this dynamic and exciting area of finance. The essential guide to state of the art techniques currently used by the very best financial traders, analysts and fund managers Provides a complete overview of cutting edge financial markets trading rules, including new material on technical analysis and evaluation Demonstrates how to apply econometrics, computer modeling, technical and quantitative analysis to generate superior returns

Identifying Patterns in Financial Markets

New Approach Combining Rules Between PIPs and SAX

Springer This book describes a new pattern discovery approach based on the combination among rules between Perceptually Important Points (PIPs) and the Symbolic Aggregate approximation (SAX) representation optimized by Genetic Algorithm (GA). The proposed approach was tested with real data from S&P500 index and all the results obtained outperform the Buy&Hold strategy. Three different case studies are presented by the authors.

Research Anthology on Multi-Industry Uses of Genetic Programming and Algorithms

IGI Global Genetic programming is a new and evolutionary method that has become a novel area of research within artificial intelligence known for automatically generating high-quality solutions to optimization and search problems. This automatic aspect of the algorithms and the mimicking of natural selection and genetics makes genetic programming an intelligent component of problem solving that is highly regarded for its efficiency and vast capabilities. With the ability to be modified and adapted, easily distributed, and effective in large-scale/wide variety of problems, genetic algorithms and programming can be utilized in many diverse industries. This multi-industry uses vary from finance and economics to business and management all the way to healthcare and the sciences. The use of genetic programming and algorithms goes beyond human capabilities, enhancing the business and processes of various essential industries and improving functionality along the way. The *Research Anthology on Multi-Industry Uses of Genetic Programming and Algorithms* covers the implementation, tools and technologies, and impact on society that genetic programming and algorithms have had throughout multiple industries. By taking a multi-industry approach, this book covers the fundamentals of genetic programming through its technological benefits and challenges along with the latest advancements and future outlooks for computer science. This book is ideal for academicians, biological engineers, computer programmers, scientists, researchers, and upper-level students seeking the latest research on genetic programming.

Environmental Information Systems: Concepts, Methodologies, Tools, and Applications

Concepts, Methodologies, Tools, and Applications

IGI Global Environmental information and systems play a major role in environmental decision making. As such, it is vital to understand the impact that they have on different aspects of sustainable environmental management, as well as to understand the opportunism they might present for further improvement. *Environmental Information Systems: Concepts, Methodologies, Tools, and Applications* is an innovative reference source containing the latest research on the use of information systems to track and organize environmental data for use in an overall environmental management system. Highlighting a range of topics such as environmental analysis, remote sensing, and geographic information science, this multi-volume book is designed for engineers, data scientists, practitioners, academicians, and researchers interested in all aspects of environmental information systems.

Intelligent Data Engineering and Automated Learning -- IDEAL 2012

13th International Conference, Natal, Brazil, August 29-31, 2012, Proceedings

Springer This book constitutes the refereed proceedings of the 13th International Conference on Intelligent Data Engineering and Automated Learning, IDEAL 2012, held in Natal, Brazil, in August 2012. The 100 revised full papers presented were carefully reviewed and selected from more than 200 submissions for inclusion in the book and present the latest theoretical advances and real-world applications in computational intelligence.

Computational Intelligence in Pattern Recognition

Proceedings of CIPR 2021

Springer Nature This book features high-quality research papers presented at the 3rd International Conference on Computational Intelligence in Pattern Recognition (CIPR 2021), held at the Institute of Engineering and Management, Kolkata, West Bengal, India, on 24 - 25 April 2021. It includes practical development experiences in various areas of data analysis and pattern recognition, focusing on soft computing technologies, clustering and classification algorithms, rough set and fuzzy set theory, evolutionary computations, neural science and neural network systems, image processing, combinatorial pattern matching, social network analysis, audio and video data analysis, data mining in dynamic environments, bioinformatics, hybrid computing, big data analytics and deep learning. It also provides innovative solutions to the challenges in these areas and discusses recent developments.

Practical Fruits of Econophysics

Proceedings of The Third Nikkei Econophysics Symposium

Springer Science & Business Media Some economic phenomena are predictable and controllable, and some are impossible to foresee. Existing economic theories do not provide satisfactory answers as to what degree economic phenomena can be predicted and controlled, and in what situations. Against this background, people working on the financial front lines in real life have to rely on empirical rules based on experiments that often lack a solid foundation. "Econophysics" is a new science that analyzes economic phenomena empirically from a physical point of view, and it is being studied mainly to offer scientific, objective and significant answers to such problems. This book is the proceedings of the third Nikkei symposium on "Practical Fruits of Econophysics," held in Tokyo, November 9-11, 2004. In the first symposium held in 2000, empirical rules were established by analyzing high-frequency financial data, and various kinds of theoretical approaches were confirmed. In the second symposium, in 2002, the predictability of imperfections and of economic fluctuations was discussed in detail, and methods for applying such studies were reported. The third symposium gave an overview of practical developments that can immediately be applied to the financial sector, or at least provide hints as to how to use the methodology.

Advances in Neural Networks - ISNN 2006

Third International Symposium on Neural Networks, ISNN 2006, Chengdu, China, May 28 - June 1, 2006, Proceedings, Part II

Springer This is Volume II of a three volume set constituting the refereed proceedings of the Third International Symposium on Neural Networks, ISNN 2006. 616 revised papers are organized in topical sections on neurobiological analysis, theoretical analysis, neurodynamic optimization, learning algorithms, model design, kernel methods, data preprocessing, pattern classification, computer vision, image and signal processing, system modeling, robotic systems, transportation systems, communication networks, information security, fault detection, financial analysis, bioinformatics, biomedical and industrial applications, and more.

Advances in Neural Networks - ISNN 2006

Pt. II: Third International Symposium on Neural Networks, ISNN 2006, Chengdu, China, May 28 - June 1, 2006, Proceedings

Springer Science & Business Media

Mathematical and Statistical Methods for Actuarial Sciences and Finance

Springer The interaction between mathematicians and statisticians has been shown to be an effective approach for dealing with actuarial, insurance and financial problems, both from an academic perspective and from an operative one. The collection of original papers presented in this volume pursues precisely this purpose. It covers a wide variety of subjects in actuarial, insurance and finance fields, all treated in the light of the successful cooperation between the above two quantitative approaches. The papers published in this volume present theoretical and methodological contributions and their applications to real contexts. With respect to the theoretical and methodological contributions, some of the considered areas of investigation are: actuarial models; alternative testing approaches; behavioral finance; clustering techniques; coherent and non-coherent risk measures; credit scoring approaches; data envelopment analysis; dynamic stochastic programming; financial contagion models; financial ratios; intelligent financial trading systems; mixture normality approaches; Monte Carlo-based methods; multicriteria methods; nonlinear parameter estimation techniques; nonlinear threshold models; particle swarm optimization; performance measures; portfolio optimization; pricing methods for structured and non-structured derivatives; risk management; skewed distribution analysis; solvency analysis; stochastic actuarial valuation methods; variable selection models; time series analysis tools. As regards the applications, they are related to real problems associated, among the others, to: banks; collateralized fund obligations; credit portfolios; defined benefit pension plans; double-indexed pension annuities; efficient-market hypothesis; exchange markets; financial time series; firms; hedge funds; non-life insurance companies; returns distributions; socially responsible mutual funds; unit-linked contracts. This book is aimed at academics, Ph.D. students, practitioners, professionals and researchers. But it will also be of interest to readers with some quantitative background knowledge.

Stock price Prediction a referential approach on how to predict the stock price using simple time series...

Clever Fox Publishing This book is about the various techniques involved in the stock price prediction. Even the people who are new to this book, after completion they can do stock trading individually with more profit.

Pattern Recognition and Image Analysis

8th Iberian Conference, IbPRIA 2017, Faro, Portugal, June 20-23, 2017, Proceedings

Springer This book constitutes the refereed proceedings of the 8th Iberian Conference on Pattern Recognition and Image Analysis, IbPRIA 2017, held in Faro, Portugal, in June 2017. The 60 regular papers presented in this volume were carefully reviewed and selected from 86 submissions. They are organized in topical sections named: Pattern Recognition and Machine Learning; Computer Vision; Image and Signal Processing; Medical Image; and Applications.

Quantum-Inspired Intelligent Systems for Multimedia Data Analysis

IGI Global As multimedia data advances in technology and becomes more complex, the hybridization of soft computing tools allows for more robust and safe solutions in data processing and analysis. Quantum-Inspired Intelligent Systems for Multimedia Data Analysis provides emerging research on techniques used in multimedia information processing using intelligent paradigms including swarm intelligence, neural networks, and deep learning. While highlighting topics such as clustering techniques, neural network architecture, and text data processing, this publication explores the methods and applications of computational intelligent tools. This book is an important resource for academics, computer engineers, IT professionals, students, and researchers seeking current research in the field of multimedia data processing and quantum intelligent systems.

Rough-Fuzzy Pattern Recognition

Applications in Bioinformatics and Medical Imaging

John Wiley & Sons Learn how to apply rough-fuzzy computing techniques to solve problems in bioinformatics and medical image processing. Emphasizing applications in bioinformatics and medical image processing, this text offers a clear framework that enables readers to take advantage of the latest rough-fuzzy computing techniques to build working pattern recognition models. The authors explain step by step how to integrate rough sets with fuzzy sets in order to best manage the uncertainties in mining large data sets. Chapters are logically organized according to the major phases of pattern recognition systems development, making it easier to master such tasks as classification, clustering, and feature selection. *Rough-Fuzzy Pattern Recognition* examines the important underlying theory as well as algorithms and applications, helping readers see the connections between theory and practice. The first chapter provides an introduction to pattern recognition and data mining, including the key challenges of working with high-dimensional, real-life data sets. Next, the authors explore such topics and issues as: Soft computing in pattern recognition and data mining A mathematical framework for generalized rough sets, incorporating the concept of fuzziness in defining the granules as well as the set Selection of non-redundant and relevant features of real-valued data sets Selection of the minimum set of basis strings with maximum information for amino acid sequence analysis Segmentation of brain MR images for visualization of human tissues Numerous examples and case studies help readers better understand how pattern recognition models are developed and used in practice. This text—covering the latest findings as well as directions for future research—is recommended for both students and practitioners working in systems design, pattern recognition, image analysis, data mining, bioinformatics, soft computing, and computational intelligence.

Proceedings of International Conference on Intelligent Computing, Information and Control Systems

ICICCS 2020

Springer Nature This book is a collection of papers presented at the International Conference on Intelligent Computing, Information and Control Systems (ICICCS 2020). It encompasses various research works that help to develop and advance the next-generation intelligent computing and control systems. The book integrates the computational intelligence and intelligent control systems to provide a powerful methodology for a wide range of data analytics issues in industries and societal applications. The book also presents the new algorithms and methodologies for promoting advances in common intelligent computing and control methodologies including evolutionary computation, artificial life, virtual infrastructures, fuzzy logic, artificial immune systems, neural networks and various neuro-hybrid methodologies. This book is pragmatic for researchers, academicians and students dealing with mathematically intransigent problems.

Fuzzy Systems: Concepts, Methodologies, Tools, and Applications

Concepts, Methodologies, Tools, and Applications

IGI Global There are a myriad of mathematical problems that cannot be solved using traditional methods. The development of fuzzy expert systems has provided new opportunities for problem-solving amidst uncertainties. *Fuzzy Systems: Concepts, Methodologies, Tools, and Applications* is a comprehensive reference source on the latest scholarly research and developments in fuzzy rule-based methods and examines both theoretical foundations and real-world utilization of these logic sets. Featuring a range of extensive coverage across innovative topics, such as fuzzy logic, rule-based systems, and fuzzy analysis, this is an essential publication for scientists, doctors, engineers, physicians, and researchers interested in emerging perspectives and uses of fuzzy systems in various sectors.

Parallel Problem Solving from Nature - PPSN VIII

8th International Conference, Birmingham, UK, September 18-22, 2004, Proceedings

Springer Science & Business Media This book constitutes the refereed proceedings of the 8th International Conference on Parallel Problem Solving from Nature, PPSN 2004, held in Birmingham, UK, in September 2004. The 119 revised full papers presented were carefully reviewed and selected from 358 submissions. The papers address all current issues in biologically inspired computing; they are organized in topical sections on theoretical and foundational issues, new algorithms, applications, multi-objective optimization, co-evolution, robotics and multi-agent systems, and learning classifier systems and data mining.

Techniques and Environments for Big Data Analysis

Parallel, Cloud, and Grid Computing

Springer This volume is aiming at a wide range of readers and researchers in the area of Big Data by presenting the recent advances in the fields of Big Data Analysis, as well as the techniques and tools used to analyze it.