

# Data Mining Foundations And Intelligent Paradigms Volume 3

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[Industrial Applications of Evolutionary Algorithms](#) - Ernesto Sanchez 2012-01-28 "Industrial applications of evolutionary algorithms" is intended as a resource for both experienced users of evolutionary algorithms and researchers that are beginning to approach these

fascinating optimization techniques. Experienced users will find interesting details of real-world problems, advice on solving issues related to fitness computation or modeling, and suggestions on how to set the appropriate parameters to reach optimal

solutions. Beginners will find a thorough introduction to evolutionary computation, and a complete presentation of several classes of evolutionary algorithms exploited to solve different problems. Inside, scholars will find useful examples on how to fill the gap between purely theoretical examples and industrial problems. The collection of case studies presented is also extremely appealing for anyone interested in Evolutionary Computation, but without direct access to extensive technical literature on the subject. After the introduction, each chapter in the book presents a test case, and is organized so that it can be read independently from the rest: all the information needed to understand the problem and the approach is reported in each part. Chapters are grouped by three themes of particular interest for real-world applications, namely prototype-based validation,

reliability and test generation. The authors hope that this volume will help to expose the flexibility and efficiency of evolutionary techniques, encouraging more companies to adopt them; and that, most of all, you will enjoy your reading.

Networked Digital Technologies, Part II -

Rachid Benlamri 2012-10-01

This two-volume-set (CCIS 293 and CCIS 294)

constitutes the refereed proceedings of the International Conference on Networked Digital Technologies, NDT 2012, held in Dubai, UAE, in April 2012. The 96 papers presented in the two volumes were carefully reviewed and selected from 228 submissions. The papers are organized in topical sections on collaborative systems for e-sciences; context-aware processing and ubiquitous systems; data and network mining; grid and cloud computing; information and

data management; intelligent agent-based systems; internet modeling and design; mobile, ad hoc and sensor network management; peer-to-peer social networks; quality of service for networked systems; semantic Web and ontologies; security and access control; signal processing and computer vision for networked systems; social networks; Web services.

*Advances in Intelligent Signal Processing and Data Mining* - Petia Georgieva  
2012-07-27

The book presents some of the most efficient statistical and deterministic methods for information processing and applications in order to extract targeted information and find hidden patterns. The techniques presented range from Bayesian approaches and their variations such as sequential Monte Carlo methods, Markov Chain Monte Carlo filters, Rao Blackwellization, to the

biologically inspired paradigm of Neural Networks and decomposition techniques such as Empirical Mode Decomposition, Independent Component Analysis and Singular Spectrum Analysis. The book is directed to the research students, professors, researchers and practitioners interested in exploring the advanced techniques in intelligent signal processing and data mining paradigms.

[New Trends in Database and Information Systems II](#) - Nick Bassiliades 2014-08-16

This volume contains the papers of 3 workshops and the doctoral consortium, which are organized in the framework of the 18th East-European Conference on Advances in Databases and Information Systems (ADBIS'2014). The 3rd International Workshop on GPUs in Databases (GID'2014) is devoted to subjects related to utilization of Graphics Processing Units in database

environments. The use of GPUs in databases has not yet received enough attention from the database community. The intention of the GID workshop is to provide a discussion on popularizing the GPUs and providing a forum for discussion with respect to the GID's research ideas and their potential to achieve high speedups in many database applications. The 3rd International Workshop on Ontologies Meet Advanced Information Systems (OAIIS'2014) has a twofold objective to present: new and challenging issues in the contribution of ontologies for designing high quality information systems, and new research and technological developments which use ontologies all over the life cycle of information systems. The 1st International Workshop on Technologies for Quality Management in Challenging Applications (TQMCA'2014) focuses on quality

management and its importance in new fields such as big data, crowd-sourcing, and stream databases. The Workshop has addressed the need to develop novel approaches and technologies, and to entirely integrate quality management into information system management.

Intelligent Paradigms for Healthcare Enterprises - Barry G. Silverman  
2005-08-25

This compendium brings together leading researchers in the fields of Intelligent Systems and healthcare aiming at medical engineers, healthcare managers and computer scientists worldwide. This book is an overview of intelligent paradigms and strategic investments that might payoff for the healthcare enterprise. Specifically, the reader will get ideas for efficiency enhancements for improving effectiveness and quality of care and for increasing

patient safety. "Advanced Intelligent Paradigms in Healthcare" straddles technologic topics from DNA processing and automating medical second opinions in the lab, to telemedicine and chat spaces for rural patient outreach, among many others. In terms of management concerns, this book also explores systems approaches such as automated clinical guidelines, institutional workflow management, and best practices and lessons learned with actual applications.

### **Foundations and Advances in Data Mining**

- Wesley Chu 2005-09-15

With the growing use of information technology and the recent advances in web systems, the amount of data available to users has increased exponentially. Thus, there is a critical need to understand the content of the data. As a result, data-mining has become a popular research topic in recent years for the

treatment of the "data rich and information poor" syndrome. In this carefully edited volume a theoretical foundation as well as important new directions for data-mining research are presented. It brings together a set of well respected data mining theoreticians and researchers with practical data mining experiences. The presented theories will give data mining practitioners a scientific perspective in data mining and thus provide more insight into their problems, and the provided new data mining topics can be expected to stimulate further research in these important directions.

### **Innovative Issues in Intelligent Systems**

- Vassil Sgurev 2016-02-05

This book presents a broad variety of different contemporary IT methods and applications in Intelligent Systems is displayed. Every book chapter represents a detailed, specific, far

reaching and original research in a respective scientific and practical field. However, all of the chapters share the common point of strong similarity in a sense of being innovative, applicable and mutually compatible with each other. In other words, the methods from the different chapters can be viewed as bricks for building the next generation “thinking machines” as well as for other futuristic logical applications that are rapidly changing our world nowadays.

### **Decision Making in Complex Systems** - Marina V. Sokolova 2012-01-13

The study of complex systems attracts the attention of many researchers in diverse fields. Complex systems are characterized by a high number of entities and a high degree of interactions. One of the most important features is that they do not involve a central organizing authority, but the various elements that make up the

systems are self-organized. Moreover, some complex systems possess an emergency priority: climate change and sustainable development research, studies of public health, ecosystem habitats, epidemiology, and medicine, among others.

Unfortunately, a great number of today’s overlapping approaches fail to meet the needs of decision makers when managing complex domains. Indeed, the design of complex systems often requires the integration of a number of artificial intelligence tools and techniques. The problem can be viewed in terms of goals, states, and actions, choosing the best action to move the system toward its desired state or behavior. This is why agent-based approaches are used to model complex systems. The main objective of this book is to bring together existing methods for decision support systems

creation within a coherent agent-based framework and to provide an interdisciplinary and flexible methodology for modeling complex and systemic domains.

**Computational Intelligence Paradigms -**

L. C. Jain 2008-06-12

This book features research on the innovative applications of advanced computational intelligence paradigms. Coverage includes architectures of computational intelligence paradigms, knowledge discovery, pattern classification, and gene linkage analysis.

**Human Interface and the Management of Information. Interaction, Visualization, and Analytics -**

Sakae Yamamoto 2018-07-09

This two-volume set LNCS 10904 and 10905 constitutes the refereed proceedings of the 20th International Conference on Human Interface and the Management of Information,

HIMI 2018, held as part of HCI International 2018 in Las Vegas, NV, USA, in July 2018. The total of 1170 papers and 195 posters included in the 30 HCII 2018 proceedings volumes was carefully reviewed and selected from 4373 submissions. The 56 papers presented in this volume were organized in topical sections named: information visualization; multimodal interaction; information in virtual and augmented reality; information and vision; and text and data mining and analytics.

Advances in Web Intelligence and Data Mining

- Mark Last 2006-08-11

This book presents state-of-the-art developments in the area of computationally intelligent methods applied to various aspects and ways of Web exploration and Web mining. Some novel data mining algorithms that can lead to more effective and intelligent Web-based systems are also described. Scientists, engineers, and

research students can expect to find many inspiring ideas in this volume.

Advances in Reasoning-Based Image Processing Intelligent Systems -

Roumen Kountchev  
2012-01-13

The book puts special stress on the contemporary techniques for reasoning-based image processing and analysis: learning based image representation and advanced video coding; intelligent image processing and analysis in medical vision systems; similarity learning models for image reconstruction; visual perception for mobile robot motion control, simulation of human brain activity in the analysis of video sequences; shape-based invariant features extraction; essential of paraconsistent neural networks, creativity and intelligent representation in computational systems. The book comprises 14 chapters. Each chapter is a small

monograph, representing recent investigations of authors in the area. The topics of the chapters cover wide scientific and application areas and complement each-other very well. The chapters' content is based on fundamental theoretical presentations, followed by experimental results and comparison with similar techniques. The size of the chapters is well-balanced which permits a thorough presentation of the investigated problems. The authors are from universities and R&D institutions all over the world; some of the chapters are prepared by international teams. The book will be of use for university and PhD students, researchers and software developers working in the area of digital image and video processing and analysis.

**Decision Making with Imperfect Decision Makers** - Tatiana Valentine  
Guy 2011-11-13



Prescriptive Bayesian decision making has reached a high level of maturity and is well-supported algorithmically. However, experimental data shows that real decision makers choose such Bayes-optimal decisions surprisingly infrequently, often making decisions that are badly sub-optimal. So prevalent is such imperfect decision-making that it should be accepted as an inherent feature of real decision makers living within interacting societies. To date such societies have been investigated from an economic and gametheoretic perspective, and even to a degree from a physics perspective. However, little research has been done from the perspective of computer science and associated disciplines like machine learning, information theory and neuroscience. This book is a major contribution to such research. Some of the particular topics addressed

include: How should we formalise rational decision making of a single imperfect decision maker? Does the answer change for a system of imperfect decision makers? Can we extend existing prescriptive theories for perfect decision makers to make them useful for imperfect ones? How can we exploit the relation of these problems to the control under varying and uncertain resources constraints as well as to the problem of the computational decision making? What can we learn from natural, engineered, and social systems to help us address these issues?

*Stochastic Global Optimization and Its Applications with Fuzzy Adaptive Simulated Annealing* - Hime Aguiar e Oliveira Junior 2012-01-26

Stochastic global optimization is a very important subject, that has applications in virtually all areas of science and technology. Therefore there

is nothing more opportune than writing a book about a successful and mature algorithm that turned out to be a good tool in solving difficult problems. Here we present some techniques for solving several problems by means of Fuzzy Adaptive Simulated Annealing (Fuzzy ASA), a fuzzy-controlled version of ASA, and by ASA itself. ASA is a sophisticated global optimization algorithm that is based upon ideas of the simulated annealing paradigm, coded in the C programming language and developed to statistically find the best global fit of a nonlinear constrained, non-convex cost function over a multi-dimensional space. By presenting detailed examples of its application we want to stimulate the reader's intuition and make the use of Fuzzy ASA (or regular ASA) easier for everyone wishing to use these tools to solve problems. We kept formal mathematical requirements

to a minimum and focused on continuous problems, although ASA is able to handle discrete optimization tasks as well. This book can be used by researchers and practitioners in engineering and industry, in courses on optimization for advanced undergraduate and graduate levels, and also for self-study.

*Machine Learning and Knowledge Discovery in Databases* - Toon Calders  
2014-09-01

This three-volume set LNAI 8724, 8725 and 8726 constitutes the refereed proceedings of the European Conference on Machine Learning and Knowledge Discovery in Databases: ECML PKDD 2014, held in Nancy, France, in September 2014. The 115 revised research papers presented together with 13 demo track papers, 10 nectar track papers, 8 PhD track papers, and 9 invited talks were carefully reviewed and selected from 550 submissions. The

papers cover the latest high-quality interdisciplinary research results in all areas related to machine learning and knowledge discovery in databases.

*Foundations of*

*Computational Intelligence -*

Ajith Abraham 2009-04-27

Foundations of

Computational Intelligence

Volume 6: Data Mining:

Theoretical Foundations and

Applications Finding

information hidden in data is

as theoretically difficult as it

is practically important. With

the objective of discovering

unknown patterns from

data, the methodologies of

data mining were derived

from statistics, machine

learning, and artificial

intelligence, and are being

used successfully in

application areas such as

bioinformatics, business,

health care, banking, retail,

and many others. Advanced

representation schemes and

computational intelligence

techniques such as rough

sets, neural networks;

decision trees; fuzzy logic;

evolutionary algorithms;

arti- cial immune systems;

swarm intelligence;

reinforcement learning,

association rule mining, Web

intelligence paradigms etc.

have proved valuable when

they are - plied to Data

Mining problems.

Computational tools or

solutions based on intel-

gent systems are being used

with great success in Data

Mining applications. It is also

observed that strong

scientific advances have

been made when issues

from different research

areas are integrated. This

Volume comprises of 15

chapters including an

overview chapter providing

an up-to-date and state-of-

the research on the

applications of

Computational Int- lligence

techniques for Data Mining.

The book is divided into 3

parts: Part-I: Data Click

Streams and Temporal Data

Mining Part-II: Text and Rule

Mining Part-III: Applications

Part I on Data Click Streams

and Temporal Data Mining

contains four chapters that describe several approaches in Data Click Streams and Temporal Data Mining.

**Computational Intelligence and Intelligent Systems -**

Kangshun Li 2018-07-20

This two-volume set (CCIS 873 and CCIS 874)

constitutes the thoroughly refereed proceedings of the 9th International Symposium, ISICA 2017, held in Guangzhou, China, in November 2017. The 101 full papers presented in both volumes were carefully reviewed and selected from 181 submissions. This first volume is organized in topical sections on neural networks and statistical learning: neural architecture search, transfer of knowledge; evolutionary multi-objective and dynamic optimization: optimal control and design, hybrid methods; data mining: association rule learning, data management platforms; Cloud computing and multiagent systems: service models, Cloud

engineering; everywhere connectivity: IoT solutions, wireless sensor networks. *Data Mining: Foundations and Intelligent Paradigms -* Dawn E. Holmes 2014-01-26 There are many invaluable books available on data mining theory and applications. However, in compiling a volume titled "DATA MINING: Foundations and Intelligent Paradigms: Volume 1: Clustering, Association and Classification" we wish to introduce some of the latest developments to a broad audience of both specialists and non-specialists in this field.

Euro-Par 2012: Parallel Processing Workshops -

Ioannis Caragiannis 2013-02-15

This book constitutes thoroughly refereed post-conference proceedings of the workshops of the 18th International Conference on Parallel Computing, Euro-Par 2012, held in Rhodes Islands, Greece, in August 2012. The papers of these

10 workshops BDMC, CGWS, HeteroPar, HiBB, OMHI, Paraphrase, PROPER, UCHPC, VHPC focus on promotion and advancement of all aspects of parallel and distributed computing.

**Between Certainty and Uncertainty** - Ludomir M.

Laudański 2012-10-13

„Between Certainty & Uncertainty” is a one-of-a-kind short course on statistics for students, engineers and researchers.

It is a fascinating introduction to statistics and probability with notes on historical origins and 80

illustrative numerical examples organized in the five units: · Chapter 1

Descriptive Statistics: Compressing small samples,

basic averages - mean and variance, their main properties including God’s proof; linear transformations and z-scored statistics . ·

Chapter 2 Grouped data: Udney Yule’s concept of

qualitative and quantitative variables. Grouping these two kinds of data. Graphical

tools. Combinatorial rules and qualitative variables.

Designing frequency histogram. Direct and coded evaluation of quantitative data. Significance of

percentiles. · Chapter 3

Regression and correlation: Geometrical distance and equivalent distances in two orthogonal directions as a prerequisite to the concept of two regression lines.

Misleading in interpreting two regression lines.

Derivation of the two regression lines. Was Hubble right? Hubble’s cloud. What in fact measures the correlation coefficient? ·

Chapter 4 Binomial distribution: Middle ages origins of the binomials;

figurate numbers and combinatorial rules. Pascal’s Arithmetical Triangle.

Bernoulli’s or Poisson Trials?

John Arbuthnot curing binomials. How Newton taught S. Pepys probability.

Jacob Bernoulli’s Weak Law of Large Numbers and others. · Chapter 5 Normal

distribution and binomial

heritage - Tables of the normal distribution. Abraham de Moivre and the second theorem of de Moivre-Laplace. · Chapter 1 Descriptive Statistics: Compressing small samples, basic averages - mean and variance, their main properties including God's proof; linear transformations and z-scored statistics . · Chapter 2 Grouped data: Udney Yule's concept of qualitative and quantitative variables. Grouping these two kinds of data. Graphical tools. Combinatorial rules and qualitative variables. Designing frequency histogram. Direct and coded evaluation of quantitative data. Significance of percentiles. · Chapter 3 Regression and correlation: Geometrical distance and equivalent distances in two orthogonal directions as a prerequisite to the concept of two regression lines. Misleading in interpreting two regression lines. Derivation of the two regression lines. Was Hubble

right? Hubble's cloud. What in fact measures the correlation coefficient? · Chapter 4 Binomial distribution: Middle ages origins of the binomials; figurate numbers and combinatorial rules. Pascal's Arithmetical Triangle. Bernoulli's or Poisson Trials? John Arbuthnot curing binomials. How Newton taught S. Pepys probability. Jacob Bernoulli's Weak Law of Large Numbers and others. · Chapter 5 Normal distribution and binomial heritage - Tables of the normal distribution. Abraham de Moivre and the second theorem of de Moivre-Laplace. · Chapter 5 Normal distribution and binomial heritage - Tables of the normal distribution. Abraham de Moivre and the second theorem of de Moivre-Laplace. *Data Mining: Foundations and Intelligent Paradigms* - Dawn E. Holmes 2014-02-22 There are many invaluable books available on data mining theory and

applications. However, in compiling a volume titled “DATA MINING: Foundations and Intelligent Paradigms: Volume 3: Medical, Health, Social, Biological and other Applications” we wish to introduce some of the latest developments to a broad audience of both specialists and non-specialists in this field.

**Machine Learning and Knowledge Discovery in Databases** - Hendrik

Blockeel 2013-08-28

This three-volume set LNAI 8188, 8189 and 8190 constitutes the refereed proceedings of the European Conference on Machine Learning and Knowledge Discovery in Databases, ECML PKDD 2013, held in Prague, Czech Republic, in September 2013. The 111 revised research papers presented together with 5 invited talks were carefully reviewed and selected from 447 submissions. The papers are organized in topical sections on reinforcement learning;

Markov decision processes; active learning and optimization; learning from sequences; time series and spatio-temporal data; data streams; graphs and networks; social network analysis; natural language processing and information extraction; ranking and recommender systems; matrix and tensor analysis; structured output prediction, multi-label and multi-task learning; transfer learning; bayesian learning; graphical models; nearest-neighbor methods; ensembles; statistical learning; semi-supervised learning; unsupervised learning; subgroup discovery, outlier detection and anomaly detection; privacy and security; evaluation; applications; and medical applications.

**Data Mining:**

**Foundations and Intelligent Paradigms** -

Dawn E. Holmes 2014-01-26

There are many invaluable books available on data mining theory and

applications. However, in compiling a volume titled "DATA MINING: Foundations and Intelligent Paradigms: Volume 2: Core Topics including Statistical, Time-Series and Bayesian Analysis" we wish to introduce some of the latest developments to a broad audience of both specialists and non-specialists in this field.

*Data Mining: Foundations and Intelligent Paradigms - Dawn E. Holmes* 2012-01-12

There are many invaluable books available on data mining theory and applications. However, in compiling a volume titled "DATA MINING: Foundations and Intelligent Paradigms: Volume 3: Medical, Health, Social, Biological and other Applications" we wish to introduce some of the latest developments to a broad audience of both specialists and non-specialists in this field.

*Recommender Systems for the Social Web - José J. Pazos Arias* 2012-01-24

The recommendation of products, content and services cannot be considered newly born, although its widespread application is still in full swing. While its growing success in numerous sectors, the progress of the Social Web has revolutionized the architecture of participation and relationship in the Web, making it necessary to restate recommendation and reconciling it with Collaborative Tagging, as the popularization of authoring in the Web, and Social Networking, as the translation of personal relationships to the Web. Precisely, the convergence of recommendation with the above Social Web pillars is what motivates this book, which has collected contributions from well-known experts in the academy and the industry to provide a broader view of the problems that Social Recommenders might face with. If recommender



systems have proven their key role in facilitating the user access to resources on the Web, when sharing resources has become social, it is natural for recommendation strategies in the Social Web era take into account the users' point of view and the relationships among users to calculate their predictions. This book aims to help readers to discover and understand the interplay among legal issues such as privacy; technical aspects such as interoperability and scalability; and social aspects such as the influence of affinity, trust, reputation and likeness, when the goal is to offer recommendations that are truly useful to both the user and the provider.

Handbook on Decision Making - Jie Lu 2012-03-15

This book presents innovative theories, methodologies, and techniques in the field of risk management and decision making. It

introduces new research developments and provides a comprehensive image of their potential applications to readers interested in the area. The collection includes: computational intelligence applications in decision making, multi-criteria decision making under risk, risk modelling, forecasting and evaluation, public security and community safety, risk management in supply chain and other business decision making, political risk management and disaster response systems. The book is directed to academic and applied researchers working on risk management, decision making, and management information systems.

Collaborative Assistive Robot for Mobility Enhancement (CARMEN) -

Cristina Urdiales 2012-02-16  
In nowadays aging society, many people require mobility assistance. Sometimes, assistive devices need a certain

degree of autonomy when users' disabilities difficult manual control. However, clinicians report that excessive assistance may lead to loss of residual skills and frustration. Shared control focuses on deciding when users need help and providing it. Collaborative control aims at giving just the right amount of help in a transparent, seamless way. This book presents the collaborative control paradigm. User performance may be indicative of physical/cognitive condition, so it is used to decide how much help is needed. Besides, collaborative control integrates machine and user commands so that people contribute to self-motion at all times. Collaborative control was extensively tested for 3 years using a robotized wheelchair at a rehabilitation hospital in Rome with volunteer inpatients presenting different disabilities, ranging from mild to severe. We also

present a taxonomy of common metrics for wheelchair navigation and tests are evaluated accordingly. Obtained results are coherent both from a quantitative and qualitative point of view. *Learning Classifier Systems in Data Mining* - Larry Bull 2008-05-29

The ability of Learning Classifier Systems (LCS) to solve complex real-world problems is becoming clear. This book brings together work by a number of individuals who demonstrate the good performance of LCS in a variety of domains.

**Data Mining: Foundations and Practice**

- Tsau Young Lin 2008-08-20  
The IEEE ICDM 2004 workshop on the Foundation of Data Mining and the IEEE ICDM 2005 workshop on the Foundation of Semantic Oriented Data and Web Mining focused on topics ranging from the foundations of data mining to new data mining paradigms. The workshops

brought together both data mining researchers and practitioners to discuss these two topics while seeking solutions to long standing data mining problems and stimulating new data mining research directions. We feel that the papers presented at these workshops may encourage the study of data mining as a scientific field and spark new communications and collaborations between researchers and practitioners.

To express the visions forged in the workshops to a wider range of data mining researchers and practitioners and foster active participation in the study of foundations of data mining, we edited this volume by involving extended and updated versions of selected papers presented at those workshops as well as some other relevant contributions. The content of this book includes studies of foundations of data mining from theoretical, practical,

algorithmical, and managerial perspectives.

The following is a brief summary of the papers contained in this book.

### Scalable Uncertainty

Management - Florence Dupin de Saint-Cyr 2022

This book constitutes the refereed proceedings of the 15th International Conference on Scalable Uncertainty Management, SUM 2022, which was held in Paris, France, in October 2022. The 19 full and 4 short papers presented in this volume were carefully reviewed and selected from 25 submissions. Besides that, the book also contains 3 abstracts of invited talks and 2 tutorial papers. The conference aims to gather researchers with a common interest in managing and analyzing imperfect information from a wide range of fields, such as artificial intelligence and machine learning, databases, information retrieval and data mining, the semantic web and risk

analysis. The chapter "Defining and Enforcing Descriptive Accuracy in Explanations: the Case of Probabilistic Classifiers" is licensed under the terms of the Creative Commons Attribution 4.0 International License.

**Encyclopedia of Information Science and Technology, Third Edition**

- Khosrow-Pour, Mehdi  
2014-07-31

"This 10-volume compilation of authoritative, research-based articles contributed by thousands of researchers and experts from all over the world emphasized modern issues and the presentation of potential opportunities, prospective solutions, and future directions in the field of information science and technology"--Provided by publisher.

*Advances in Visual*

*Informatics* - Halimah

Badioze Zaman 2017-11-13

This book constitutes the refereed proceedings of the 5th International Conference

on Advances in Visual Informatics, IVIC 2017, held in Bangi, Malaysia, in November 2017. The keynote and 72 papers presented were carefully reviewed and selected from 130 submissions. The papers are organized in the following topics:

Visualization and Data Driven Technology;

Engineering and Data Driven Innovation; Data Driven

Societal Well-being and Applications; and Data

Driven Cyber Security.

Transactions on

Computational Collective

Intelligence XXI - Ngoc

Thanh Nguyen 2016-03-04

These transactions publish research in computer-based

methods of computational collective intelligence (CCI)

and their applications in a wide range of fields such as

the semantic Web, social networks, and multi-agent

systems. TCCI strives to

cover new methodological,

theoretical and practical

aspects of CCI understood

as the form of intelligence

that emerges from the collaboration and competition of many individuals (artificial and/or natural). The application of multiple computational intelligence technologies, such as fuzzy systems, evolutionary computation, neural systems, consensus theory, etc., aims to support human and other collective intelligence and to create new forms of CCI in natural and/or artificial systems. This twenty-first issue contains 7 carefully selected and revised contributions.

**Computational and Statistical Methods for Analysing Big Data with Applications** - Shen Liu  
2015-11-20

Due to the scale and complexity of data sets currently being collected in areas such as health, transportation, environmental science, engineering, information technology, business and finance, modern quantitative analysts are seeking improved and

appropriate computational and statistical methods to explore, model and draw inferences from big data. This book aims to introduce suitable approaches for such endeavours, providing applications and case studies for the purpose of demonstration.

Computational and Statistical Methods for Analysing Big Data with Applications starts with an overview of the era of big data. It then goes onto explain the computational and statistical methods which have been commonly applied in the big data revolution. For each of these methods, an example is provided as a guide to its application. Five case studies are presented next, focusing on computer vision with massive training data, spatial data analysis, advanced experimental design methods for big data, big data in clinical medicine, and analysing data collected from mobile devices, respectively. The book

concludes with some final thoughts and suggested areas for future research in big data. Advanced computational and statistical methodologies for analysing big data are developed Experimental design methodologies are described and implemented to make the analysis of big data more computationally tractable Case studies are discussed to demonstrate the implementation of the developed methods Five high-impact areas of application are studied: computer vision, geosciences, commerce, healthcare and transportation Computing code/programs are provided where appropriate

*Non-negative Matrix*

*Factorization Techniques -*

Ganesh R. Naik 2015-09-25

This book collects new results, concepts and further developments of NMF. The open problems discussed include, e.g. in bioinformatics: NMF and its extensions applied to gene

expression, sequence analysis, the functional characterization of genes, clustering and text mining etc. The research results previously scattered in different scientific journals and conference proceedings are methodically collected and presented in a unified form. While readers can read the book chapters sequentially, each chapter is also self-contained. This book can be a good reference work for researchers and engineers interested in NMF, and can also be used as a handbook for students and professionals seeking to gain a better understanding of the latest applications of NMF.

*Advances in Robotics and*

*Virtual Reality - Tauseef*

Gulrez 2011-11-13

A beyond human knowledge and reach, robotics is strongly involved in tackling challenges of new emerging multidisciplinary fields. Together with humans, robots are busy exploring

and working on the new generation of ideas and problems whose solution is otherwise impossible to find. The future is near when robots will sense, smell and touch people and their lives. Behind this practical aspect of human-robotics, there is a half a century spanned robotics research, which transformed robotics into a modern science. The *Advances in Robotics and Virtual Reality* is a compilation of emerging application areas of robotics. The book covers robotics role in medicine, space exploration and also explains the role of virtual reality as a non-destructive test bed which constitutes a premise of further advances towards new challenges in robotics. This book, edited by two famous scientists with the support of an outstanding team of fifteen authors, is a well suited reference for robotics researchers and scholars from related disciplines such as computer graphics,

virtual simulation, surgery, biomechanics and neuroscience.

### **Interval-Valued Intuitionistic Fuzzy Sets -**

Krassimir T. Atanassov  
2019-09-21

The book offers a comprehensive survey of interval-valued intuitionistic fuzzy sets. It reports on cutting-edge research carried out by the founder of the intuitionistic fuzzy sets, Prof. Krassimir Atanassov, giving a special emphasis to the practical applications of this extension. A few interesting case studies, such as in the area of data mining, decision making and pattern recognition, among others, are discussed in detail. The book offers the first comprehensive guide on interval-valued intuitionistic fuzzy sets. By providing the readers with a thorough survey and important practical details, it is expected to support them in carrying out applied research and to encourage them to test the theory

behind the sets for new advanced applications. The book is a valuable reference resource for graduate students and researchers alike.

*Advances in Data Mining: Applications and Theoretical Aspects* - Petra Perner

2015-06-19

This book constitutes the refereed proceedings of the 15th Industrial Conference on Advances in Data Mining, ICDM 2015, held in Hamburg, Germany, in July 2015. The 16 revised full papers presented were carefully reviewed and selected from numerous 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.

**Recent Advances in Soft Computing** - Radek

Matoušek 2017-05-20

This proceeding book contains a collection of

selected accepted papers of the Mendel conference held in Brno, Czech Republic in June 2016. The proceedings book contains three chapters which present recent advances in soft computing including intelligent image processing. The Mendel conference was established in 1995 and is named after the scientist and Augustinian priest Gregor J. Mendel who discovered the famous Laws of Heredity. The main aim of the conference is to create a regular possibility for students, academics and researchers to exchange ideas and novel research methods on a yearly basis.

*Artificial Intelligence and Security* - Xingming Sun

2019-07-18

The 4-volume set LNCS 11632 until LNCS 11635 constitutes the refereed proceedings of the 5th

International Conference on Artificial Intelligence and Security, ICAIS 2019, which was held in New York, USA, in July 2019. The conference



was formerly called “International Conference on Cloud Computing and Security” with the acronym ICCCS. The total of 230 full papers presented in this 4-volume proceedings was carefully reviewed and selected from 1529 submissions. The papers were organized in topical sections as follows: Part I:

cloud computing; Part II: artificial intelligence; big data; and cloud computing and security; Part III: cloud computing and security; information hiding; IoT security; multimedia forensics; and encryption and cybersecurity; Part IV: encryption and cybersecurity.