

International Journal Of Soft Computing

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Soft Computing Based Medical Image Analysis Springer Nature
Rapid advancements in the application of soft computing tools and techniques have proven valuable in the development of highly scalable systems and resulted in brilliant applications, including those in biometric identification, interactive voice response systems, and data mining. Although many resources on the subject adequately cover the theoretic concepts, few provide clear insight into practical application. Filling this need, *Real Life Applications of Soft Computing* explains such applications, including the underlying technology and its implementation. While these systems initially seem complex, the authors clearly demonstrate how they can be modeled, designed, and implemented. Written in a manner that makes it accessible to novices, the book begins by covering the theoretical foundations of soft computing. It supplies a concise explanation of various models, principles, algorithms, tools, and techniques, including artificial neural networks, fuzzy systems, evolutionary algorithms, and hybrid algorithms. Supplying in-depth exposure to real life systems, the text provides: Multi-dimensional coverage supported by references, figures, and tables Warnings about common pitfalls in the implementation process, as well as detailed examinations of possible solutions A timely account of developments in various areas of application Solved examples and exercises in each chapter Detailing a wide range of contemporary applications, the text includes coverage of those in biometric systems, including physiological and behavioral biometrics. It also examines applications in legal threat assessment, robotic path planning, and navigation control. The authors consider fusion methods in biometrics and bioinformatics and also provide effective disease identification techniques. Complete with algorithms for robotic path planning, the book addresses character recognition and presents the picture compression technique by using a customized hybrid algorithm. The authors conclude with a discussion of parallel architecture for artificial neural networks and supply guidelines for creating and implementing effective soft computing designs.

Mathematical Modeling and Soft Computing in Epidemiology CRC Press
This book constitutes thoroughly refereed post-conference proceedings of the International Applied Soft Computing and Communication Networks (ACN 2020) held in VIT, Chennai, India, during October 14 – 17, 2020. The research papers presented were carefully reviewed and selected from several initial submissions. The book is directed to the researchers and scientists engaged in various fields of intelligent systems.

Soft Computing for Problem Solving IGI Global
Soft computing and nature-inspired computing both play a significant role in developing a better understanding to machine learning. When studied together, they can offer new perspectives on the learning process of machines. *The Handbook of Research on Soft Computing and Nature-Inspired Algorithms* is an essential source for the latest

scholarly research on applications of nature-inspired computing and soft computational systems. Featuring comprehensive coverage on a range of topics and perspectives such as swarm intelligence, speech recognition, and electromagnetic problem solving, this publication is ideally designed for students, researchers, scholars, professionals, and practitioners seeking current research on the advanced workings of intelligence in computing systems.

Theory and Practical Applications Springer Nature
This book comprises a selection of papers on theoretical advances and applications of fuzzy logic and soft computing from the IFSA 2007 World Congress, held in Cancun, Mexico, June 2007. These papers constitute an important contribution to the theory and applications of fuzzy logic and soft computing methodologies.

Applied Computational Intelligence and Soft Computing in Engineering Springer Science & Business Media
Although computational intelligence and soft computing are both well-known fields, using computational intelligence and soft computing in conjunction is an emerging concept. This combination can effectively be used in practical areas of various fields of research. *Applied Computational Intelligence and Soft Computing in Engineering* is an essential reference work featuring the latest scholarly research on the concepts, paradigms, and algorithms of computational intelligence and its constituent methodologies such as evolutionary computation, neural networks, and fuzzy logic. Including coverage on a broad range of topics and perspectives such as cloud computing, sampling in optimization, and swarm intelligence, this publication is ideally designed for engineers, academicians, technology developers, researchers, and students seeking current research on the benefits of applying computation intelligence techniques to engineering and technology.

Soft Computing Methods for Microwave and Millimeter-Wave Design Problems CRC Press

Soft Computing Based Medical Image Analysis
presents the foremost techniques of soft computing in medical image analysis and processing. It includes image enhancement, segmentation, classification-based soft computing, and their application in diagnostic imaging, as well as an extensive background for the development of intelligent systems based on soft computing used in medical image analysis and processing. The book introduces the theory and concepts of digital image analysis and processing based on soft computing with real-world medical imaging applications. Comparative studies for soft computing based medical imaging techniques and traditional approaches in medicine are addressed, providing

flexible and sophisticated application-oriented solutions. Covers numerous soft computing approaches, including fuzzy logic, neural networks, evolutionary computing, rough sets and Swarm intelligence Presents transverse research in soft computing formation from various engineering and industrial sectors in the medical domain Highlights challenges and the future scope for soft computing based medical analysis and processing techniques

Soft Computing in Inventory Management Springer
This book is the proceedings of the 3rd World Conference on Soft Computing (WCSC), which was held in San Antonio, TX, USA, on December 16-18, 2013. It presents start-of-the-art theory and applications of soft computing together with an in-depth discussion of current and future challenges in the field, providing readers with a 360 degree view on soft computing. Topics range from fuzzy sets, to fuzzy logic, fuzzy mathematics, neuro-fuzzy systems, fuzzy control, decision making in fuzzy environments, image processing and many more. The book is dedicated to Lotfi A. Zadeh, a renowned specialist in signal analysis and control systems research who proposed the idea of fuzzy sets, in which an element may have a partial membership, in the early 1960s, followed by the idea of fuzzy logic, in which a statement can be true only to a certain degree, with degrees described by numbers in the interval $[0,1]$. The performance of fuzzy systems can often be improved with the help of optimization techniques, e.g. evolutionary computation, and by endowing the corresponding system with the ability to learn, e.g. by combining fuzzy systems with neural networks. The resulting "consortium" of fuzzy, evolutionary, and neural techniques is known as soft computing and is the main focus of this book.

Special Issue on Soft Computing Systems
Frontiers Media SA

Data warehouse is one of the components of the overall business intelligence system. An enterprise has one data warehouse, and data marts source has their information from the data warehouse. The Data warehouse is a corporation of all data marts within the enterprise. Information is always accumulated in the dimensional model. In this paper, an intelligent data repository with soft computing is presented. It covers similarity metrics that are commonly used to improve the efficiency of data storages. It also covers multiple decision making methodologies to improve the efficiency of decision making.

Solutions toward Industry 5.0 IGI Global

The field of Soft Computing in Humanities and Social Sciences is at a turning point. The strong distinction between "science" and "humanities" has been criticized from many fronts and, at the same time, an increasing cooperation between the so-called "hard sciences" and "soft sciences" is taking place in a wide range of scientific projects dealing with very complex and interdisciplinary topics. In the last fifteen years the area of Soft Computing has also experienced a gradual rapprochement to disciplines in the Humanities and Social Sciences, and also in the field of Medicine, Biology and even the Arts, a phenomenon that did not occur much in the previous years. The collection of this book

presents a generous sampling of the new and burgeoning field of Soft Computing in Humanities and Social Sciences, bringing together a wide array of authors and subject matters from different disciplines. Some of the contributors of the book belong to the scientific and technical areas of Soft Computing while others come from various fields in the humanities and social sciences such as Philosophy, History, Sociology or Economics. Rudolf Seising received a Ph.D. degree in philosophy of science and a postdoctoral lecture qualification (PD) in history of science from the Ludwig Maximilians University of Munich. He is an Adjoint Researcher at the European Centre for Soft Computing in Mieres (Asturias), Spain. Veronica Sanz earned a Ph.D. in Philosophy at the University Complutense of Madrid (Spain). At the moment she is a Postdoctoral Researcher at the Science, Technology and Society Center in the University of California at Berkeley. Veronica Sanz earned a Ph.D. in Philosophy at the University Complutense of Madrid (Spain). At the moment she is a Postdoctoral Researcher at the Science, Technology and Society Center in the University of California at Berkeley.

Proceedings of ACN 2020 BoD - Books on Demand

The volume contains original research findings, exchange of ideas and dissemination of innovative, practical development experiences in different fields of soft and advance computing. It provides insights into the International Conference on Soft Computing in Data Analytics (SCDA). It also concentrates on both theory and practices from around the world in all the areas of related disciplines of soft computing. The book provides rapid dissemination of important results in soft computing technologies, a fusion of research in fuzzy logic, evolutionary computations, neural science and neural network systems and chaos theory and chaotic systems, swarm based algorithms, etc. The book aims to cater the postgraduate students and researchers working in the discipline of computer science and engineering along with other engineering branches.

Proceeding of CISC 2017 Infinite Study

Soft computing is a branch of computer science that deals with a family of methods that imitate human intelligence. This is done with the goal of creating tools that will contain some human-like capabilities (such as learning, reasoning and decision-making). This book covers the entire gamut of soft computing, including fuzzy logic, rough sets, artificial neural networks, and various evolutionary algorithms. It offers a learner-centric approach where each new concept is introduced with carefully designed examples/instances to train the learner.

Handbook of Research on Fuzzy and Rough Set Theory in Organizational Decision Making

Springer Science & Business Media

"This book explores emerging technologies and best practices designed to effectively address concerns inherent in properly

optimizing advanced systems, demonstrating applications in areas such as bio-engineering, space exploration, industrial informatics, information security, and nuclear and renewable energies"--Provided by publisher.

Advance Trends in Soft Computing Springer

Soft computing methods such as neural networks and genetic algorithms draw on the problem solving strategies of the natural world which differ fundamentally from the mathematically-based computing methods normally used in engineering. Human brains are highly effective computers with capabilities far beyond those of the most sophisticated electronic computers. The 'soft computing' methods they use can solve very difficult inverse problems based on reduction in disorder. This book outlines these methods and applies them to a range of difficult engineering problems, including applications in computational mechanics, earthquake engineering, and engineering design. Most of these are difficult inverse problems - especially in engineering design - and are treated in depth.

Soft Computing in Engineering IGI Publishing

This book aims at addressing the challenges of contemporary manufacturing in Industry 4.0 environment and future manufacturing (aka Industry 5.0), by implementing soft computing as one of the major sub-fields of artificial intelligence. It contributes to development and application of the soft computing systems, including links to hardware, software and enterprise systems, in resolving modern manufacturing issues in complex, highly dynamic and globalized industrial circumstances. It embraces heterogeneous complementary aspects, such as control, monitoring and modeling of different manufacturing tasks, including intelligent robotic systems and processes, addressed by various machine learning and fuzzy techniques; modeling and parametric optimization of advanced conventional and non-conventional, eco-friendly manufacturing processes by using machine learning and evolutionary computing techniques; cybersecurity framework for Internet of Things-based systems addressing trustworthiness and resilience in machine-to-machine and human-machine collaboration; static and dynamic digital twins integration and synchronization in a smart factory environment; STEP-NC technology for a smart machine vision system, and integration of Open CNC with Service-Oriented Architecture for STEP-NC monitoring system in a smart manufacturing. Areas of interest include but are not limited to applications of soft computing to address the following: dynamic process/system modeling and simulation, dynamic process/system parametric

optimization, dynamic planning and scheduling, smart, predictive maintenance, intelligent and autonomous systems, improved machine cognition, effective digital twins integration, human-machine collaboration, robots, and cobots.

Proceedings of SocPros 2020, Volume 2

Springer Nature

The book presents new approaches and methods for solving real-world problems. It offers, in particular, exploratory research that describes novel approaches in the fields of Cognitive Informatics, Cognitive Computing, Computational Intelligence, Advanced Computing, Hybrid Intelligent Models and Applications. New algorithms and methods in a variety of fields are also presented, together with solution-based approaches. The topics addressed include various theoretical aspects and applications of Computer Science, Artificial Intelligence, Cybernetics, Automation Control Theory and Software Engineering.

International Journal of System Dynamics

Applications, Vol 1 ISS 3 CRC Press

This book presents a collection of mathematical models that deals with the real scenario in the industries. The primary objective of this book is to explore various effective methods for inventory control and management using soft computing techniques. Inventory control and management is a very tedious task faced by all the organizations in any sector of the economy. It makes decisions for policies, activities, and procedures in order to make sure that the right amount of each item is held in stock at any time. Many industries suffer from indiscipline while ordering and production mismatch. It is essential to provide best ordering policy to control such kind of mismatch in the industries. All the mathematical model solutions are provided with the help of various soft computing optimization techniques to determine optimal ordering policy. This book is beneficial for practitioners, educators, and researchers. It is also helpful for retailers/managers for improving business functions and making more accurate and realistic decisions.

Soft Computing Methods for System

Dependability IGI Global

A critical part of ensuring that systems are advancing alongside technology without complications is problem solving. Practical applications of problem-solving theories can model conflict and cooperation and aid in creating solutions to real-world problems. Soft-Computing-Based Nonlinear Control Systems Design is a critical scholarly publication that examines the practical applications of control theory and its applications in problem solving to fields including economics, environmental management, and financial modelling.

Featuring a wide range of topics, such as fuzzy logic, nature-inspired algorithms, and cloud computing, this book is geared toward academicians, researchers, and students seeking relevant research on control theory and its practical applications.

bioprocess identification and I-term control and the use of BRNN-SVM to improve protein-domain prediction accuracy. Recurrent neural networks can also be used in virtual reality and nonlinear dynamical systems, as shown by two chapters.

Handbook of Research on Soft Computing and Nature-Inspired Algorithms Pearson Education India

The book is a collection of high-quality peer-reviewed research papers presented in International Conference on Soft Computing Systems (ICSCS 2015) held at Noorul Islam Centre for Higher Education, Chennai, India. These research papers provide the latest developments in the emerging areas of Soft Computing in Engineering and Technology. The book is organized in two volumes and discusses a wide variety of industrial, engineering and scientific applications of the emerging techniques. It presents invited papers from the inventors/originators of new applications and advanced technologies.

Handbook of Research on Novel Soft Computing Intelligent Algorithms Springer

Search engines, with Google at the top, have become the most heavily used online service, with millions of searches performed every day and many remarkable capabilities. Soft Computing for Information Processing and Analysis includes reports from the front of soft computing in the internet industry and imparts knowledge and understanding of the significance of the field's accomplishments, new developments and future directions. This carefully edited book has evolved from presentations made by the participants of a meeting entitled "Fuzzy Logic and the Internet: Enhancing the Power of the Internet", organized by the Berkeley Initiative in Soft Computing (BISC), University of California, Berkeley. It addresses the important topics of modern search engines such as fuzzy query, decision analysis and support systems, including articles about topics such as Web Intelligence, World Knowledge and Fuzzy Logic (by Lotfi A. Zadeh), perception based information processing, or web intelligence. *Soft Computing and Its Applications to E-business* CRC Press

New applications in recurrent neural networks are covered by this book, which will be required reading in the field. Methodological tools covered include ranking indices for fuzzy numbers, a neuro-fuzzy digital filter and mapping graphs of parallel programmes. The scope of the techniques profiled in real-world applications is evident from chapters on the recognition of severe weather patterns, adult and foetal ECGs in healthcare and the prediction of temperature time-series signals. Additional topics in this vein are the application of AI techniques to electromagnetic interference problems,