
Soft Computing Journal

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Anticipatory Systems: Humans Meet Artificial Intelligence Springer Nature

"This publication presents a series of practical applications of different Soft Computing techniques to real-world problems, showing the enormous potential of these techniques in solving problems"--Provided by publisher.

Proceedings of the 8th International Workshop Soft Computing Applications (SOFA 2018), Vol. I
John Wiley & Sons

In today ' s modernized world, the field of healthcare has seen significant practical innovations with the implementation of computational intelligence approaches and soft computing methods. These two concepts present various solutions to complex scientific problems and imperfect data issues. This has made both very popular in the medical profession. There are still various areas to be studied and improved by these two schemes as healthcare practices continue to develop. Computational Intelligence and Soft Computing Applications in Healthcare Management Science is an essential reference source that discusses the implementation of soft computing techniques and computational methods in the various components of healthcare, telemedicine, and public health. Featuring research on topics such as analytical modeling, neural networks, and fuzzy logic, this book is ideally designed for software engineers, information scientists, medical professionals, researchers,

developers, educators, academicians, and students.

Proceeding of CISC 2020 Physica

This textbook provides a thorough introduction to the field of learning from experimental data and soft computing. Support vector machines (SVM) and neural networks (NN) are the mathematical structures, or models, that underlie learning, while fuzzy logic systems (FLS) enable us to embed structured human knowledge into workable algorithms. The book assumes that it is not only useful, but necessary, to treat SVM, NN, and FLS as parts of a connected whole. Throughout, the theory and algorithms are illustrated by practical examples, as well as by problem sets and simulated experiments. This approach enables the reader to develop SVM, NN, and FLS in addition to understanding them. The book also presents three case studies: on NN-based control, financial time series analysis, and computer graphics. A solutions manual and all of the MATLAB programs needed for the simulated experiments are

available.

Soft Computing for Problem Solving Frontiers Media SA

Applied Soft Computing and Embedded System Applications in Solar Energy deals with energy systems and soft computing methods from a wide range of approaches and application perspectives. The authors examine how embedded system applications can deal with the smart monitoring and controlling of stand-alone and grid-connected solar photovoltaic (PV) systems for increased efficiency. Growth in the area of artificial intelligence with embedded system applications has led to a new era in computing, impacting almost all fields of science and engineering. Soft computing methods implemented to energy-related problems regularly face data-driven issues such as problems of optimization, classification, clustering, or prediction. The authors offer real-time implementation of soft computing and embedded system in the area of solar energy to address the issues with microgrid and smart grid projects (both renewable and non-renewable generations), energy management, and power regulation. They also discuss and examine alternative solutions for energy capacity assessment, energy efficiency systems design, as well as other specific smart grid energy system applications. The book is intended for students, professionals, and researchers in electrical and computer engineering fields, working on renewable energy resources, microgrids, and smart grid projects. Examines the integration of hardware with stand-alone PV panels and real-time monitoring of factors affecting the efficiency of the

PV panels Offers real-time implementation of soft computing and embedded system in the area of solar energy Discusses how soft computing plays a huge role in the prediction of efficiency of stand-alone and grid-connected solar PV systems Discusses how embedded system applications with smart monitoring can control and enhance the efficiency of stand-alone and grid-connected solar PV systems Explores swarm intelligence techniques for solar PV parameter estimation Dr. Rupendra Kumar Pachauri is Assistant Professor – Selection Grade in the Department of Electrical and Electronics Engineering, University of Petroleum and Energy Studies (UPES), Dehradun, India. Dr. Jitendra Kumar Pandey is Professor & Head of R&D in the University of Petroleum and Energy Studies (UPES), Dehradun, India. Mr. Abhishek Sharma is working as a research scientist in the research and development department (UPES, India). Dr. Om Prakash Nautiyal is working as a scientist in Uttarakhand Science Education & Research Centre (USERC), Department of Information and Science Technology, Govt. of Uttarakhand, Dehradun, India. Prof. Mangey Ram is working as a Research Professor at Graphic Era Deemed to be University, Dehradun, India.

Proceedings of ICMISC 2020
Academic Press

In the middle of the 20th century, Genrich Altshuller, a Russian engineer, analysed hundreds of thousands of patents and scientific publications. From this analysis, he developed TRIZ (G.

Altshuller, "40 Principles: TRIZ Keys to Technical Innovation. TRIZ Tools," Volume 1, First Edition, Technical Innovation Center, Inc., Worcester, MA, January 1998; Y. Salamatov, "TRIZ: The Right Solution at the Right Time. A Guide to Innovative Problem Solving. " Insytec B. V. , 1999), the theory of inventive problem solving, together with a series of practical tools for helping engineers solving technical problems. Among these tools and theories, the substance-field theory gives a structured way of representing problems, the patterns of evolution show the lifecycle of technical systems, the contradiction matrix tells you how to resolve technical contradictions, using the forty principles that describe common ways of improving technical systems. For example, if you want to increase the strength of a device, without adding too much extra weight to it, the contradiction matrix tells you that you can use "Principle 1: Segmentation," or "Principle 8: Counterweight," or "Principle 15: Dynamicity," or "Principle 40:

Composite Materials. " I really like two particular ones: "Principle 1: Segmentation," and Principle 15: Dynamicity. " "Segmentation" shows how systems evolve from an initial monolithic form into a set of independent parts, then eventually increasing the number of parts until each part becomes small enough that it cannot be identified anymore. Multimedia, Soft Computing, and Bioinformatics Springer Nature "This book provides a reference to researchers, practitioners, and students in both soft computing and data mining communities for generating creative ideas of securing and managing data mining"--Provided by publisher. IGI Global Information on integrating soft computing techniques into video surveillance is widely scattered among conference papers, journal articles, and books. Bringing this research together in one source, Handbook on Soft Computing for Video Surveillance illustrates the application of soft computing techniques to different tasks in video surveillance. Worldwide experts in the field present novel

solutions to video surveillance problems and discuss future trends. After an introduction to video surveillance systems and soft computing tools, the book gives examples of neural network-based approaches for solving video surveillance tasks and describes summarization techniques for content identification. Covering a broad spectrum of video surveillance topics, the remaining chapters explain how soft computing techniques are used to detect moving objects, track objects, and classify and recognize target objects. The book also explores advanced surveillance systems under development. Incorporating both existing and new ideas, this handbook unifies the basic concepts, theories, algorithms, and applications of soft computing. It demonstrates why and how soft computing methodologies can be used in various video surveillance problems. *Soft Computing Applications* Springer With all the material available in the field of artificial intelligence (AI) and soft

computing-texts, monographs, and journal articles-there remains a serious gap in the literature. Until now, there has been no comprehensive resource accessible to a broad audience yet containing a depth and breadth of information that enables the reader to fully understand and readily apply AI and soft computing concepts. Artificial Intelligence and Soft Computing fills this gap. It presents both the traditional and the modern aspects of AI and soft computing in a clear, insightful, and highly comprehensive style. It provides an in-depth analysis of mathematical models and algorithms and demonstrates their applications in real world problems. Beginning with the behavioral perspective of "human cognition," the text covers the tools and techniques required for its intelligent realization on machines. The author addresses the classical aspects-search, symbolic logic, planning, and machine learning-in detail and includes the latest research in these areas. He introduces the modern aspects of soft computing from first principles and discusses

them in a manner that enables a beginner to grasp the subject. He also covers a number of other leading aspects of AI research, including nonmonotonic and spatio-temporal reasoning, knowledge acquisition, and much more. *Artificial Intelligence and Soft Computing: Behavioral and Cognitive Modeling of the Human Brain* is unique for its diverse content, clear presentation, and overall completeness. It provides a practical, detailed introduction that will prove valuable to computer science practitioners and students as well as to researchers migrating to the subject from other disciplines.

SocProS 2018, Volume 1 Springer Science & Business Media
Anticipatory Systems: Humans Meet Artificial Intelligence Frontiers Media
SAApplied Computational Intelligence and Soft Computing in Engineering IGI Global

Applications to Brake Friction and Thermoset Matrix Composites IGI Global

First title to ever present soft computing approaches and their application in data

mining, along with the traditional hard-computing approaches. Addresses the principles of multimedia data compression techniques (for image, video, text) and their role in data mining. Discusses principles and classical algorithms on string matching and their role in data mining.

A Bibliometric Analysis of Aggregation Operators

Springer Science & Business Media

The two-volume set LNAI 7094 and 7095 constitutes the refereed proceedings of the 10th Mexican International Conference on Artificial Intelligence, MICAI 2011, held in Puebla, Mexico, in November/December 2011. The 96 revised papers presented were carefully selected from XXX submissions. The second volume contains 46 papers focusing on soft computing. The papers are organized in the following topical

sections: fuzzy logic, uncertainty and probabilistic reasoning; evolutionary algorithms and other naturally-inspired algorithms; data mining; neural networks and hybrid intelligent systems; and computer vision and image processing.

Soft Computing in Textile Engineering CRC Press

This two-volume book presents the outcomes of the 8th International Conference on Soft Computing for Problem Solving, SocProS 2018. This conference was a joint technical collaboration between the Soft Computing Research Society, Liverpool Hope University (UK), and Vellore Institute of Technology (India), and brought together researchers, engineers and practitioners to discuss thought-provoking developments and challenges in order to select potential future

directions. The book highlights the latest advances and innovations in the interdisciplinary areas of soft computing, including original research papers on algorithms (artificial immune systems, artificial neural networks, genetic algorithms, genetic programming, and particle swarm optimization) and applications (control systems, data mining and clustering, finance, weather forecasting, game theory, business and forecasting applications). It offers a valuable resource for both young and experienced researchers dealing with complex and intricate real-world problems that are difficult to solve using traditional methods.

Theory and Practical Applications CRC Press

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 for Reservoir

Characterization and Modeling
Springer Nature

This book presents the proceedings of the 8th International Workshop on Soft Computing Applications, SOFA 2018, held on 13-15 September 2018 in Arad, Romania. The workshop was organized by Aurel Vlaicu University of Arad, in conjunction with the Institute of Computer Science, Iasi Branch of the Romanian Academy, IEEE Romanian Section, Romanian Society of Control Engineering and Technical Informatics - Arad Section, General Association of Engineers in Romania - Arad Section and BTM Resources Arad. The papers included in these proceedings, published post-conference, cover the research including Knowledge-Based Technologies for Web Applications, Cloud Computing, Security Algorithms and Computer Networks, Business Process Management, Computational Intelligence in Education and Modelling and

Applications in Textiles and many other areas related to the Soft Computing. The book is directed to professors, researchers, and graduate students in area of soft computing techniques and applications.

Cognitive and Soft Computing Techniques for the Analysis of Healthcare Data CRC Press

Soft Computing Techniques in Solid Waste and Wastewater Management is a thorough guide to computational solutions for researchers working in solid waste and wastewater management operations. This book covers in-depth analysis of process variables, their effects on overall efficiencies, and optimal conditions and procedures to improve performance using soft computing techniques. These topics coupled with the systematic analyses described will help readers understand various techniques that can be effectively used to achieve the

highest performance. In-depth case studies along with discussions on applications of various soft-computing techniques help readers control waste processes and come up with short-term, mid-term and long-term strategies. Waste management is an increasingly important field due to rapidly increasing levels of waste production around the world. Numerous potential solutions for reducing waste production are underway, including applications of machine learning and computational studies on waste management processes. This book details the diverse approaches and techniques in these fields, providing a single source of information researchers and industry practitioners. It is ideal for academics, researchers and engineers in waste management, environmental science, environmental engineering and computing, with relation to environmental

science and waste management. Provides a comprehensive reference on the implementation of soft computing techniques in waste management, drawing together current research and future implications Includes detailed algorithms used, enabling authors to understand and appreciate potential applications Presents relevant case studies in solid and wastewater management that show real-world applications of discussed technologies
Soft Computing in Water Resources Engineering Elsevier
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 through 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.

Proceedings of SocProS 2020, Volume 2 Springer Nature
Soft computing refers to a

collection of computational techniques which study, model and analyse complex phenomena. As many textile engineering problems are inherently complex in nature, soft computing techniques have often provided optimum solutions to these cases. Although soft computing has several facets, it mainly revolves around three techniques; artificial neural networks, fuzzy logic and genetic algorithms. The book is divided into five parts, covering the entire process of textile production, from fibre manufacture to garment engineering. These include soft computing techniques in yarn manufacture and modelling, fabric and garment manufacture, textile properties and applications and textile quality evaluation. Covers the entire process of textile production, from fibre manufacture to garment engineering including artificial neural networks, fuzzy logic and genetic algorithms Examines soft computing techniques in yarn manufacture and modelling, fabric and garment manufacture Specifically reviews soft computing in relation to textile

properties and applications featuring garment modelling and sewing machines
Soft Computing Techniques in Solid Waste and Wastewater Management IGI Global
This book gathers selected papers presented at the International Conference on Machine Intelligence and Soft Computing (ICMISC 2020), held jointly by Vignan's Institute of Information Technology, Visakhapatnam, India and VFSTR Deemed to be University, Guntur, AP, India during 03-04 September 2020. Topics covered in the book include the artificial neural networks and fuzzy logic, cloud computing, evolutionary algorithms and computation, machine learning, metaheuristics and swarm intelligence, neuro-fuzzy system, soft computing and decision support systems, soft computing applications

in actuarial science, soft computing for database deadlock resolution, soft computing methods in engineering, and support vector machine.

Soft Numerical Computing in Uncertain Dynamic Systems 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-Based Nonlinear Control Systems Design CRC Press
This book presents best selected research papers presented at the 3rd International Conference on

Cognitive Informatics and Soft Computing (CISC 2020), held at Balasore College of Engineering & Technology, Balasore, Odisha, India, from 12 to 13 December 2020. It highlights, in particular, innovative research in the fields of cognitive informatics, cognitive computing, computational intelligence, advanced computing, and hybrid intelligent models and applications. New algorithms and methods in a variety of fields are 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.