

Application Of Soft Computing In Electrical Engineering

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[Soft Computing Applications](#) Springer
Softcomputing techniques play a vital role in the industry. This book presents several important papers presented by some of the well-known scientists from all over the globe. The main techniques of soft computing presented include ant-colony optimization, artificial immune systems, artificial neural networks, Bayesian models. The book includes various examples and application domains such as bioinformatics, detection of phishing attacks, and fault detection of motors.

[Soft Computing in Industrial Applications](#) Springer Science & Business Media
This book contains a selection of papers that were initially presented at the 4th On-Line World Conference on Soft Computing in Industrial Applications that was held in September 1999. Soft Computing provides various methodologies for developing intelligent systems that offer competitive solutions to real world problems. This book is comprised of a unique collection of papers that provide a comprehensive overview of state-of-the-art-theory and sucessful industrial applications of soft computing around the world. It is written by some of the leading researchers in this field. This book is aimed at researchers and professional engineers who are engaged in developing intelligent systems as well as graduate students in science and engineering.

[Soft Computing Applications](#) Physica
This book discusses the applications of different soft computing techniques for the web-based systems and services. The respective chapters highlight recent developments in the field of soft computing applications, from web-based information retrieval to online marketing and online healthcare. In each chapter author endeavor to explain the basic ideas behind the proposed applications in an accessible format for readers who may not possess a background in these fields. This carefully edited book covers a wide range of new applications of soft computing techniques in Web recommender systems, Online documents classification, Online documents summarization, Online document clustering, Online market intelligence, Web usage profiling, Web data extraction, Social network extraction, Question answering systems, Online health care, Web knowledge management, Multimedia information retrieval, Navigation guides, User profiles extraction, Web-based distributed information systems, Web security applications, Internet of Things Applications and so on. The book is aimed for researchers and practitioner who are engaged in developing and applying intelligent systems principles for solving real-life problems. Further, it has been structured so that each chapter can be read independently of the others.

[Soft Computing In Systems And Control Technology](#) Springer Science & Business Media
This is volume 2 of the two-volume Soft Computing and Its Applications. This volume discusses several advanced features of soft computing and hybrid methodologies. This new book essentially contains the advanced features of soft computing and different hybrid methodologies for soft computing. The book contains an abundance of examples and detailed design studies. The tool soft computing can be a landmark paradigm of computation with cognition that directly or indirectly tries to replicate the rationality of human beings. The book explains several advanced features of soft computing, such as cognitive maps, complex valued fuzzy sets and fuzzy logic, quantum fuzzy sets and quantum fuzzy logic, and rough sets and hybrid methods that combine neural net fuzzy logic and genetic algorithms. The book contains several real-life applications to present the utility and potential of soft computing. The book:

- Discusses the present state of art of soft computing
- Includes the existing application areas of soft computing
- Presents original research contributions
- Discusses the future scope of work in soft computing

The book is unique in that it bridges the gap between theory and practice, and it presents several experimental results on synthetic data and real-life data. The book provides a unified platform for applied scientists and engineers in different fields and industries for the application of soft computing tools in many diverse domains of engineering.

This book can be used as a textbook and /or reference book by undergraduate and postgraduate students of many different engineering branches, such as electrical engineering, control engineering, electronics and communication engineering, computer sciences, and information sciences. Soft Computing and Industry CRC Press

This book provides a comprehensive overview of recent advances in the industrial applications of soft computing. It covers a wide range of application areas, including optimisation, data analysis and data mining, computer graphics and vision, prediction and diagnosis, design, intelligent control, and traffic and transportation systems. The book is aimed at researchers and professional engineers engaged in developing and applying intelligent systems.

[Applications and Science in Soft Computing](#) Springer
This book provides a reference guide for researchers, scientists and industrialists working in the area of soft computing, and highlights the latest advances in and applications of soft computing techniques in multidisciplinary areas. Gathering papers presented at the International Conference on Soft Computing: Theories and Applications (SoCTA 2016), which was held in Jaipur, Rajasthan, India, on December 28-30, 2016, it focuses on applying soft computing to solve real-life problems arising in various domains, from medical and healthcare to supply chain management, image processing and cryptanalysis. The term soft computing represents an umbrella term for computational techniques like fuzzy logic, neural networks and nature inspired algorithms. In the past few decades, there has been an exponential rise in the application of soft computing techniques to address complex and intricate problems in diverse spheres of life. The versatility of these techniques has made them a favourite among scientists and researchers alike.

[Engineering Applications of Soft Computing](#) Springer Science & Business Media
This volume contains the Proceedings of the 5thInternational Workshop on Soft Computing Applications (SOFA 2012). The book covers a broad spectrum of soft computing techniques, theoretical and practical applications employing knowledge and intelligence to find solutions for world industrial, economic and medical problems. The combination of such intelligent systems tools and a large number of applications introduce a need for a synergy of scientific and technological disciplines in order to show the great potential of Soft Computing in all domains. The conference papers included in these proceedings, published post conference, were grouped into the following area of research:

- Soft Computing and Fusion Algorithms in Biometrics,
- Fuzzy Theory, Control andApplications,
- Modelling and Control Applications,
- Steps towards Intelligent Circuits,
- Knowledge-Based Technologies for Web Applications, Cloud Computing and Security Algorithms,
- Computational Intelligence for Biomedical Applications,
- Neural Networks and Applications,
- Intelligent Systems for Image Processing,
- Knowledge Management for Business Process and Enterprise Modelling.

The combination of intelligent systems tools and a large number of applications introduce a need for a synergy of scientific and technological disciplines in order to show the great potential of Soft Computing in all domains. Soft Computing IGI Global

This book is a tribute to Lotfi A. Zadeh, the father of fuzzy logic, on the occasion of his 90th Birthday. The book gathers original scientific contributions written by top scientists and presenting the latest theories, applications and new trends in the fascinating and challenging field of soft computing.

[Soft Computing](#) Springer Science & Business Media
This Special Edited Volume is a unique approach towards Computational solution for the upcoming field of study called Vision Science. From a scientific firmament Optics, Ophthalmology, and Optical Science has surpassed an Odyssey of optimizing configurations of Optical systems, Surveillance Cameras and other Nano optical devices with the metaphor of Nano Science and Technology. Still these systems are falling short of its computational aspect to achieve the pinnacle of human vision system. In this edited volume much attention has been given to address the coupling issues Computational Science and Vision Studies. It is a comprehensive collection of research works addressing various related areas of Vision Science like Visual Perception and Visual system, Cognitive Psychology, Neuroscience, Psychophysics and Ophthalmology, linguistic relativity, color vision etc. This issue carries some latest developments in the form of research articles and presentations. The volume is rich of contents with technical tools for convenient experimentation in Vision Science. There are 18 research papers having significance in an array of application areas. The volume claims to be an effective compendium of computing developments like Frequent Pattern Mining, Genetic Algorithm, Gabor Filter, Support Vector Machine, Region Based Mask Filter, 4D stereo camera systems, Principal Component Analysis etc. The detailed analysis of the papers can immensely benefit to the researchers of this domain. It can be an Endeavour in the pursuit of adding value in the

existing stock of knowledge in Vision Science. [Soft Computing Techniques in Vision Science](#) Springer Nature
Presents knowledge and experience of soft computing techniques in civil engineering. The principal concern of the book is to show how soft computing techniques can be applied to solve problems in research and practice. Soft Computing World Scientific
Soft computing techniques have reached a significant level of recognition and - ceptance from both the academic and industrial communities. The papers collected in this volume illustrate the depth of the current theoretical research trends and the breadth of the application areas in which soft computing methods are making c- tributions. This volume consists of forty six selected papers presented at the Fourth Inter- tional Conference on Recent Advances in Soft Computing, which was held in N- th th tingham, United Kingdom on 12 and 13 December 2002 at Nottingham Trent University. This volume is organized in five parts. The first four parts address mainly the f- damental and theoretical advances in soft computing, namely Artificial Neural Networks, Evolutionary Computing, Fuzzy Systems and Hybrid Systems. The fifth part of this volume presents papers that deal with practical issues and ind- trial applications of soft computing techniques. We would like to express our sincere gratitude to all the authors who submitted contributions for inclusion. We are also indebted to Janusz Kacprzyk for his - vices related to this volume. We hope you find the volume an interesting refl- tion of current theoretical and application based soft computing research.

[Application of Soft Computing, Machine Learning, Deep Learning and Optimizations in Geoenvironment and Geoscience](#) Springer Science & Business Media
This volume presents the proceedings of the 9th Online World Conference on Soft Computing in Industrial Applications, held on the World Wide Web in 2004. It includes lectures, original papers and tutorials presented during the conference. The book brings together outstanding research and developments in soft computing, including evolutionary computation, fuzzy logic, neural networks, and their fusion, and its applications in science and technology.

[Soft Computing and Its Applications](#) CRC Press
This book summarizes the application of soft computing techniques, machine learning approaches, deep learning algorithms and optimization techniques in geoenvironment including tunnelling, excavation, pipelines, etc. and geoscience including the geohazards, rock and soil properties, etc. The book features state-of-the-art studies on use of SC,ML,DL and optimizations in Geoenvironment and Geoscience. Considering these points and understanding, this book will be compiled with highly focussed chapters that will discuss the application of SC,ML,DL and optimizations in Geoenvironment and Geoscience. Target audience: (1) Students of UG, PG, and Research Scholars: Several applications of SC,ML,DL and optimizations in Geoenvironment and Geoscience can help students to enhance their knowledge in this domain. (2) Industry Personnel and Practitioner: Practitioners from different fields can be able to implement standard and advanced SC,ML,DL and optimizations for solving critical problems of civil engineering.

[Soft Computing Applications](#) Springer
The papers collected in this book are concerned with the application of the so-called "soft-computing" techniques to the aim of defining flexible systems. The topics covered witness the actual research trend towards an integration of distinct formal techniques for defining flexible systems. The contributions in this volume mainly concern the definition of systems in several application fields, such as image processing, control, asset allocation, medicine, time series forecasting, qualitative modeling, support to design, reliability analysis, diagnosis, filtering, data analysis, land mines detection and so forth. The papers presented in this volume are organized into three main thematic sections: Fuzzy Systems, Neural Networks and Genetic and Evolutionary Algorithms, although, as outlined before, some works employ more than one technique from these fields.

[Application of Soft Computing Techniques in Civil Engineering](#) CRC Press
The concept of soft computing is still in its initial stages of crystallization. Presently available books on soft computing are merely collections of chapters or articles about different aspects of the field. This book is the first to provide a systematic account of the major concepts and methodologies of soft computing, presenting a unified framework that makes the subject more accessible to students and practitioners. Particularly worthy of note is the inclusion of a wealth of information about neuro-fuzzy, neuro-genetic, fuzzy-genetic and neuro-fuzzy-genetic systems, with many illuminating applications and examples. [Applications of Soft Computing in Time Series Forecasting](#) CRC Press
Soft computing has been presented not only with the theoretical developments but also with a large variety of realistic applications to consumer products and industrial systems. Application of soft computing has provided the opportunity to integrate human-like vagueness and real-life uncertainty into

an otherwise hard computer program. This book highlights some of the recent developments in practical applications of soft computing in engineering problems. All the chapters have been sophisticatedly designed and revised by international experts to achieve wide but in-depth coverage.

Soft Computing and Its Applications, Volume Two Springer Science & Business Media

"Soft Computing and its Applications in Business and Economics," or SC-BE for short, is a work whose importance is hard to exaggerate. Authored by leading contributors to soft computing and its applications, SC-BE is a sequel to an earlier book by Professors R. A. Aliev and R. R. Aliev, "Soft Computing and Its Applications," World Scientific, 2001. SC-BE is a self-contained exposition of the foundations of soft computing, and presents a vast compendium of its applications to business, finance, decision analysis and economics. One cannot but be greatly impressed by the wide variety of applications - applications ranging from use of fuzzy logic in transportation and health case systems, to use of a neuro-fuzzy approach to modeling of credit risk in trading, and application of soft computing to e-commerce. To view the contents of SC-BE in a clearer perspective, a bit of history is in order. In science, as in other realms of human activity, there is a tendency to be nationalistic - to commit oneself to a particular methodology and relegate to a position of inferiority or irrelevance all alternative methodologies. As we move further into the age of machine intelligence and automated reasoning, we run into more and more problems which do not lend themselves to solution through the use of our favorite methodology.

Practical Applications of Soft Computing in Engineering World Scientific

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.

Applications of Soft Computing Springer Science & Business Media

The Soft Computing techniques, which are based on the information processing of biological systems are now massively used in the area of pattern recognition, making prediction & planning, as well as acting on the environment. Ideally speaking, soft computing is not a subject of homogeneous concepts and techniques; rather, it is an amalgamation of distinct methods that confirms to its guiding principle. At present, the main aim of soft computing is to exploit the tolerance for imprecision and uncertainty to achieve tractability, robustness and low solutions cost. The principal constituents of soft computing techniques are probabilistic reasoning, fuzzy logic, neuro-computing, genetic algorithms, belief networks, chaotic systems, as well as learning theory. This book covers contributions from various authors to demonstrate the use of soft computing techniques in various applications of engineering.

Soft Computing in Measurement and Information Acquisition World Scientific

This new volume explores a variety of modern techniques that deal with estimated models and give resolutions to complex real-life issues. Soft computing has played a crucial role not only with theoretical paradigms but is also popular for its pivotal role for designing a large variety of expert systems and artificial intelligence-based applications. Involving the concepts and practices of soft computing in conjunction with other frontier research domains, this book begins with the basics and goes on to explore a variety of modern applications of soft computing in areas such as approximate reasoning, artificial neural networks, Bayesian networks, big data analytics, bioinformatics, cloud computing, control systems, data mining, functional approximation, fuzzy logic, genetic and evolutionary algorithms, hybrid models, machine learning, metaheuristics, neuro fuzzy system, optimization, randomized searches, and swarm intelligence. This book will be helpful to a wide range of readers who wish to learn applications of soft computing approaches. It will be useful for academicians, researchers, students, and machine learning experts who use soft computing techniques and algorithms to develop cutting-edge artificial intelligence-based applications.