

Artificial Intelligence Techniques For Medical Image Analysis

Basics Methods Applications

Artificial Intelligence Techniques for a Scalable Energy Transition **Open Source Intelligence Techniques Handbook of Research on Artificial Intelligence Techniques and Algorithms** **Artificial Intelligence and Industrial Applications** **Computational Intelligence Techniques for Green Smart Cities** **Intelligent Techniques in Engineering Management** **Artificial Intelligence Techniques in Power Systems** *Artificial Intelligence Techniques for Computer Graphics* **Intelligent Techniques for Data Science** **Advanced Computational Intelligence Techniques for Virtual Reality in Healthcare** **Computational Intelligence Techniques for Trading and Investment** **Combating Fake News with Computational Intelligence Techniques** **Impact and Opportunities of Artificial Intelligence Techniques in the Steel Industry** *Practical Applications of Computational Intelligence Techniques* *Structured Analytic Techniques for Intelligence Analysis* **Artificial Intelligence Techniques for Satellite Image Analysis** **Pattern Recognition and Computational Intelligence Techniques Using Matlab** *Computational Intelligence Techniques for Combating COVID-19* *Intelligent Techniques for Planning* *Artificial Intelligent Techniques for Wireless Communication and Networking* *Artificial Intelligence Techniques for Advanced Computing Applications* *Smart Computational Intelligence in Biomedical and Health Informatics* **Applications of Artificial Intelligence Techniques in Engineering** *Computational Intelligence Techniques for Smart Cities* *New Perspectives on Enterprise Decision-Making* *Applying Artificial Intelligence Techniques* *Artificial Intelligence Techniques Transforming Management Using Artificial Intelligence Techniques* **Computational Intelligence Techniques for Combating COVID-19** **Catalogue of Artificial Intelligence Tools** **Computational Intelligence Techniques for Decision Making** *Artificial Intelligence Techniques in IoT Sensor Networks* *Advances in Computational Intelligence Techniques* **Intelligent Bioinformatics** *Advanced Computational Intelligence Techniques for Virtual Reality in Healthcare* *Applications of Artificial Intelligence Techniques in the Petroleum Industry* **Computational Intelligence Techniques for Bioprocess Modelling, Supervision and Control** **Illustrated Computational Intelligence Applications of Artificial Intelligence Techniques in Engineering** **Computational Intelligence in Power Engineering** *Multidisciplinary Computational Intelligence Techniques: Applications in Business, Engineering, and Medicine*

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Structured Analytic Techniques for Intelligence Analysis Aug 14 2021 The Third Edition of *Structured Analytic Techniques for Intelligence Analysis* by Randolph H. Pherson and Richards J. Heuer Jr showcases sixty-six structured analytic techniques—nine new to this edition—that represent the most current best practices in intelligence, law enforcement, homeland security, and business analysis. With more depth, detail, and utility than existing handbooks, each technique is clearly and systematically explained. Logically organized and richly illustrated, and with spiral binding and tabs that separate techniques into categories, this book is an easy-to-use, comprehensive reference.

Intelligent Techniques in Engineering Management May 23 2022 This book presents recently developed intelligent techniques with applications and theory in the area of engineering management. The involved applications of intelligent techniques such as neural networks, fuzzy sets, Tabu search, genetic algorithms, etc. will be useful for engineering managers, postgraduate students, researchers, and lecturers. The book has been written considering the contents of a classical engineering management book but intelligent techniques are used for handling the engineering management problem areas. This comprehensive characteristics of the book makes it an excellent reference for the solution of complex problems of engineering management. The authors of the chapters are well-known researchers with their previous works in the area of engineering management.

Artificial Intelligence Techniques in Power Systems Apr 22 2022 The intention of this book is to give an introduction to, and an overview of, the field of artificial intelligence techniques in power systems, with a look at various application studies.

Handbook of Research on Artificial Intelligence Techniques and Algorithms Aug 26 2022 For decades, optimization methods such as Fuzzy Logic, Artificial Neural Networks, Firefly, Simulated annealing, and Tabu search, have been capable of handling and tackling a wide range of real-world application problems in society and nature. Analysts have turned to these problem-solving techniques in the event during natural disasters and chaotic systems research. The Handbook of Research on Artificial Intelligence Techniques and Algorithms highlights the cutting edge developments in this promising research area. This premier reference work applies Meta-heuristics Optimization (MO) Techniques to real world problems in a variety of fields including business, logistics, computer science, engineering, and government. This work is particularly relevant to researchers, scientists, decision-makers, managers, and practitioners.

Intelligent Bioinformatics Jan 27 2020 Bioinformatics is contributing to some of the most important advances in medicine and biology. At the forefront of this exciting new subject are techniques known as artificial intelligence which are inspired by the way in which nature solves the problems it faces. This book provides a unique insight into the complex problems of bioinformatics and the innovative solutions which make up 'intelligent

bioinformatics'. Intelligent Bioinformatics requires only rudimentary knowledge of biology, bioinformatics or computer science and is aimed at interested readers regardless of discipline. Three introductory chapters on biology, bioinformatics and the complexities of search and optimisation equip the reader with the necessary knowledge to proceed through the remaining eight chapters, each of which is dedicated to an intelligent technique in bioinformatics. The book also contains many links to software and information available on the internet, in academic journals and beyond, making it an indispensable reference for the 'intelligent bioinformatician'. Intelligent Bioinformatics will appeal to all postgraduate students and researchers in bioinformatics and genomics as well as to computer scientists interested in these disciplines, and all natural scientists with large data sets to analyse.

Artificial Intelligence Techniques for Satellite Image Analysis Jul 13 2021 The main objective of this book is to provide a common platform for diverse concepts in satellite image processing. In particular it presents the state-of-the-art in Artificial Intelligence (AI) methodologies and shares findings that can be translated into real-time applications to benefit humankind. Interdisciplinary in its scope, the book will be of interest to both newcomers and experienced scientists working in the fields of satellite image processing, geo-engineering, remote sensing and Artificial Intelligence. It can be also used as a supplementary textbook for graduate students in various engineering branches related to image processing.

Advanced Computational Intelligence Techniques for Virtual Reality in Healthcare Dec 26 2019 This book addresses the difficult task of integrating computational techniques with virtual reality and healthcare. It discusses the use of virtual reality in various areas, such as healthcare, cognitive and behavioural training, understanding mathematical graphs, human-computer interaction, fluid dynamics in healthcare industries, accurate real-time simulation, and healthcare diagnostics. Presenting the computational techniques for virtual reality in healthcare, it is a valuable reference resource for professionals at educational institutes as well as researchers, scientists, engineers and practitioners in industry.

Multidisciplinary Computational Intelligence Techniques: Applications in Business, Engineering, and Medicine Jun 19 2019 "This book explores the complex world of computational intelligence, which utilizes computational methodologies such as fuzzy logic systems, neural networks, and evolutionary computation for the purpose of managing and using data effectively to address complicated real-world problems"--

Computational Intelligence Techniques for Combating COVID-19 May 11 2021 This book presents the latest cutting edge research, theoretical methods, and novel applications in the field of computational intelligence and computational biological approaches that are aiming to combat COVID-19. The book gives the technological key drivers behind using AI to find drugs that target the virus, shedding light on the structure of COVID-19, detecting the outbreak and spread of new diseases, spotting signs of a COVID-19 infection in medical images, monitoring how the virus and lockdown is affecting mental health, and forecasting how COVID-19 cases and deaths will spread across cities and why. Further, the book helps readers understand computational intelligence techniques combating COVID-19 in a simple and systematic way.

Catalogue of Artificial Intelligence Tools May 31 2020 The purpose of this catalogue is to promote interaction between members of the AI' community. It will do this by announcing the existence of Ai techniques and portable software. and acting as a pOinter into the literature. Thus the AI community wili have access to a common. extensional definition of the field. which will: promote a common terminology. discourage the reinvention of wheels. and act as a clearing house for ideas and software. The cataiogue is a reference work providing a quick guide to the AI tools available for different jobs. It is not intended to be a textbook like the Artificial Intelligence Handbook. It. intentionally. only provides a brief description of each tool. with no extended discussion of the historical origin of the tool or how it has been used in particular AI programs, The focus is on techniques abstracted from their historical origins. The original version of the catalogue. was hastily built in 1983 as part of the UK SERC-Dol. IKBS. Architecture Study [IKBS Architecture Study 831. it has now been adopted by the SERC Specially Promoted Programme in IKBS and is kept as an on line document undergoing constant revision and refinement and published as a paperback by Springer Verlag.

Artificial Intelligence Techniques in IoT Sensor Networks Mar 29 2020 Artificial Intelligence Techniques in IoT Sensor Networks is a technical book which can be read by researchers, academicians, students and professionals interested in artificial intelligence (AI), sensor networks and Internet of Things (IoT). This book is intended to develop a shared understanding of applications of AI techniques in the present and near term. The book maps the technical impacts of AI technologies, applications and their implications on the design of solutions for sensor networks. This text introduces researchers and aspiring academicians to the latest developments and trends in AI applications for sensor networks in a clear and well-organized manner. It is mainly useful for research scholars in sensor networks and AI techniques. In addition, professionals and practitioners working on the design of real-time applications for sensor networks may benefit directly from this book. Moreover, graduate and master's students of any departments related to AI, IoT and sensor networks can find this book fascinating for developing expert systems or real-time applications. This book is written in a simple and easy language, discussing the fundamentals, which relieves the requirement of having early backgrounds in the field. From this expectation and experience, many libraries will be interested in owning copies of this work.

Applications of Artificial Intelligence Techniques in the Petroleum Industry Nov 24 2019 Applications of Artificial Intelligence Techniques in the Petroleum Industry gives engineers a critical resource to help them understand the machine learning that will solve specific engineering challenges. The reference begins with fundamentals, covering preprocessing of data, types of intelligent models, and training and optimization algorithms. The book moves on to methodically address artificial intelligence technology and applications by the upstream sector, covering exploration, drilling, reservoir and production engineering. Final sections cover current gaps and future challenges. Teaches how to apply machine learning algorithms that work best in exploration, drilling, reservoir or production engineering Helps readers increase their existing knowledge on intelligent data modeling, machine learning and artificial intelligence, with foundational chapters covering the preprocessing of data and training on algorithms Provides tactics on how to cover complex projects such as shale gas, tight oils, and other types of unconventional reservoirs with more advanced model input

Computational Intelligence Techniques for Bioprocess Modelling, Supervision and Control Oct 24 2019 Computational Intelligence (CI) and Bioprocess are well-established research areas which have much to offer each other. Under the perspective of the CI area, Biop- cess can be considered a vast application area with a growing number of complex and challenging tasks to be dealt with, whose solutions can contribute to boosting the development of new intelligent techniques as well as to help the refinement and s- cialization of many of the already existing techniques. Under the perspective of the Bioprocess area, CI can be considered a useful repertoire of theories, methods and techniques that can

contribute and offer interesting alternative approaches for solving many of its problems, particularly those hard to solve using conventional techniques. Although throughout the past years CI and Bioprocess areas have accumulated substantial specific knowledge and progress has been quick and with a high degree of success, we believe there is still a long way to go in order to use the potentialities of the available CI techniques and knowledge at their full extent, as tools for supporting problem solving in bioprocesses. One of the reasons is the fact that both areas have progressed steadily and have been continuously accumulating and refining specific knowledge; another reason is the high level of technical expertise demanded by each of them. The acquisition of technical skills, experience and good insights in either of the two areas is very demanding and a hard task to be accomplished by any professional.

Artificial Intelligence Techniques Sep 03 2020 The purpose of "Artificial Intelligence Techniques: A Comprehensive Cata logue" is to promote interaction between members of the AI community. It does this by announcing the existence of AI techniques, and acting as a pointer into the literature. Thus the AI community has access to a common, extensional definition of the field, which promotes a common terminology, discourages the reinvention of wheels, and acts as a clearing house for ideas and algorithms. I am grateful to the impressive group of AI experts who have contributed the many descriptions of AI techniques which go to make up this Catalogue. They have managed to distill a very wide knowledge of AI into a very compact form. The Catalogue is a reference work providing a quick guide to the AI tech niques available for different tasks. Intentionally, it only provides a brief de scription of each technique, with no extended discussion of its historical origin or how it has been used in particular AI programs.

Advances in Computational Intelligence Techniques Feb 26 2020 This book highlights recent advances in computational intelligence for signal processing, computing, imaging, artificial intelligence, and their applications. It offers support for researchers involved in designing decision support systems to promote the societal acceptance of ambient intelligence, and presents the latest research on diverse topics in intelligence technologies with the goal of advancing knowledge and applications in this rapidly evolving field. As such, it offers a valuable resource for researchers, developers and educators whose work involves recent advances and emerging technologies in computational intelligence.

Impact and Opportunities of Artificial Intelligence Techniques in the Steel Industry Oct 16 2021 This book collects perceptions and needs expectations and experiences concerning the application of Artificial Intelligence (AI) and Machine Learning in the steel sector. It contains a selection of themes discussed within the Workshop entitled "Impact and Opportunities of Artificial Intelligence in the Steel Industry" organized by the European Steel Technology Platform as an online event from October 15 until November 5, 2020. The event aimed at analyzing the diffusion of AI technologies in steelworks and at providing indications for

future research, development and innovation actions addressing the sector demands. The chapters treat general analyses on transversal themes and applications for process optimization, product quality enhancement, yield increase, optimal exploitation of resources and smart data handling. The book is devoted to researchers and technicians in the steel or AI fields as well as for managers and policymakers exploring the opportunities provided by AI in industry.

Computational Intelligence Techniques for Trading and Investment Dec 18 2021

Computational intelligence, a sub-branch of artificial intelligence, is a field which draws on the natural world and adaptive mechanisms in order to study behaviour in changing complex environments. This book provides an interdisciplinary view of current technological advances and challenges concerning the application of computational intelligence techniques to financial time-series forecasting, trading and investment. The book is divided into five parts. The first part introduces the most important computational intelligence and financial trading concepts, while also presenting the most important methodologies from these different domains. The second part is devoted to the application of traditional computational intelligence techniques to the fields of financial forecasting and trading, and the third part explores the applications of artificial neural networks in these domains. The fourth part delves into novel evolutionary-based hybrid methodologies for trading and portfolio management, while the fifth part presents the applications of advanced computational intelligence modelling techniques in financial forecasting and trading. This volume will be useful for graduate and postgraduate students of finance, computational finance, financial engineering and computer science. Practitioners, traders and financial analysts will also benefit from this book.

Computational Intelligence in Power Engineering Jul 21 2019

Computational Intelligence (CI) is one of the most important powerful tools for research in the diverse fields of engineering sciences ranging from traditional fields of civil, mechanical engineering to vast sections of electrical, electronics and computer engineering and above all the biological and pharmaceutical sciences. The existing field has its origin in the functioning of the human brain in processing information, recognizing pattern, learning from observations and experiments, storing and retrieving information from memory, etc. In particular, the power industry being on the verge of epoch changing due to deregulation, the power engineers require Computational intelligence tools for proper planning, operation and control of the power system. Most of the CI tools are suitably formulated as some sort of optimization or decision making problems. These CI techniques provide the power utilities with innovative solutions for efficient analysis, optimal operation and control and intelligent decision making. This edited volume deals with different CI techniques for solving real world Power Industry problems. The technical contents will be extremely helpful for the researchers as well as the practicing engineers in the power industry.

Artificial Intelligence Techniques for a

Scalable Energy Transition Oct 28 2022

This book presents research in artificial techniques using intelligence for energy transition, outlining several applications including production systems, energy production, energy distribution, energy management, renewable energy production, cyber security, industry 4.0 and internet of things etc. The book goes beyond standard application by placing a specific focus on the use of AI techniques to address the challenges related to the different applications and topics of energy transition. The contributions are classified according to the market and actor interactions (service providers, manufacturers, customers, integrators, utilities etc.), to the SG architecture model (physical layer, infrastructure layer, and business layer), to the digital twin of SG (business model, operational model, fault/transient model, and asset model), and to the application domain (demand side management, load monitoring, micro grids, energy consulting (residents, utilities), energy saving, dynamic pricing revenue management and smart meters, etc.).

Transforming Management Using Artificial Intelligence Techniques Aug 02 2020

Transforming Management Using Artificial Intelligence Techniques redefines management practices using artificial intelligence (AI) by providing a new approach. It offers a detailed, well-illustrated treatment of each topic with examples and case studies, and brings the exciting field to life by presenting a substantial and robust introduction to AI in a clear and concise manner. It provides a deeper understanding of how the relevant aspects of AI impact each other's efficacy for better output. It's a reliable and accessible one-step resource that introduces AI; presents a full examination of the foundations; examines education powered by AI, entertainment, home and service robots, healthcare re-imagined, predictive policing, space exploration; and so much more, all within the realm of AI. This book will feature: Uncovering new and innovative features of AI and how it can help in raising economic efficiency at both micro- and macro levels Both the literature and practical aspects of AI and its uses This book summarizing key concepts at the end of each chapter to assist reader comprehension Case studies of tried and tested approaches to resolutions of typical problems Ideal for both teaching and general-knowledge purposes. This book will also simply provide the topic of AI for the readers, aspiring researchers and practitioners involved in management and computer science, so they can obtain a high-level of understanding of AI and managerial applications.

Artificial Intelligence Techniques for Advanced Computing Applications Feb 08 2021

This book features a collection of high-quality research papers presented at the International Conference on Advanced Computing Technology (ICACT 2020), held at the SRM Institute of Science and Technology, Chennai, India, on 23-24 January 2020. It covers the areas of computational intelligence, artificial intelligence, machine learning, deep learning, big data, and applications of artificial intelligence in networking, IoT and bioinformatics

Applications of Artificial Intelligence

Techniques in Engineering Aug 22 2019

The book is a collection of high-quality, peer-reviewed innovative research papers from the International Conference on Signals, Machines and Automation (SIGMA 2018) held at Netaji Subhas Institute of Technology (NSIT), Delhi, India. The conference offered researchers from academic and industry the opportunity to present their original work and exchange ideas, information, techniques and applications in the field of computational intelligence, artificial intelligence and machine intelligence. The book is divided into two volumes discussing a wide variety of industrial, engineering and scientific applications of the emerging techniques.

Intelligent Techniques for Data Science

Feb 20 2022 This textbook provides readers with the tools, techniques and cases required to excel with modern artificial intelligence methods. These embrace the family of neural networks, fuzzy systems and evolutionary computing in addition to other fields within machine learning, and will help in identifying, visualizing, classifying and analyzing data to support business decisions. The authors, discuss advantages and drawbacks of different approaches, and present a sound foundation for the reader to design and implement data analytic solutions for real-world applications in an intelligent manner. Intelligent Techniques for Data Science also provides real-world cases of extracting value from data in various domains such as retail, health, aviation, telecommunication and tourism.

Illustrated Computational Intelligence Sep 22 2019

This book presents a summary of artificial intelligence and machine learning techniques in its first two chapters. The remaining chapters of the book provide everything one must know about the basic artificial intelligence to modern machine intelligence techniques including the hybrid computational intelligence technique, using the concepts of several real-life solved examples, design of projects and research ideas. The solved examples with more than 200 illustrations presented in the book are a great help to instructors, students, non-AI professionals, and researchers. Each example is discussed in detail with encoding, normalization, architecture, detailed design, process flow, and sample input/output. Summary of the fundamental concepts with solved examples is a unique combination and highlight of this book.

Advanced Computational Intelligence Techniques for Virtual Reality in

Healthcare Jan 19 2022

This book addresses the difficult task of integrating computational techniques with virtual reality and healthcare. It discusses the use of virtual reality in various areas, such as healthcare, cognitive and behavioural training, understanding mathematical graphs, human-computer interaction, fluid dynamics in healthcare industries, accurate real-time simulation, and healthcare diagnostics. Presenting the computational techniques for virtual reality in healthcare, it is a valuable reference resource for professionals at educational institutes as well as researchers, scientists, engineers and practitioners in industry.

Artificial Intelligent Techniques for Wireless Communication and Networking Mar 09 2021

ARTIFICIAL INTELLIGENT TECHNIQUES FOR

WIRELESS COMMUNICATION AND NETWORKING The 20 chapters address AI principles and techniques used in wireless communication and networking and outline their benefit, function, and future role in the field. Wireless communication and networking based on AI concepts and techniques are explored in this book, specifically focusing on the current research in the field by highlighting empirical results along with theoretical concepts. The possibility of applying AI mechanisms towards security aspects in the communication domain is elaborated; also explored is the application side of integrated technologies that enhance AI-based innovations, insights, intelligent predictions, cost optimization, inventory management, identification processes, classification mechanisms, cooperative spectrum sensing techniques, ad-hoc network architecture, and protocol and simulation-based environments. Audience Researchers, industry IT engineers, and graduate students working on and implementing AI-based wireless sensor networks, 5G, IoT, deep learning, reinforcement learning, and robotics in WSN, and related technologies.

Computational Intelligence Techniques for Green Smart Cities Jun 24 2022 This book contains high-quality and original research on computational intelligence for green smart cities research. In recent years, the use of smart city technology has rapidly increased through the successful development and deployment of Internet of Things (IoT) architectures. The citizens' quality of life has been improved in several sensitive areas of the city, such as transportation, buildings, health care, education, environment, and security, thanks to these technological advances. Computational intelligence techniques and algorithms enable a computational analysis of enormous data sets to reveal patterns that recur. This information is used to inform and improve decision-making at the municipal level to build smart computational intelligence techniques and sustainable cities for their citizens. Machine intelligence allows us to identify trends (patterns). The smart city could better integrate its transportation network, for example. By offering a better public transportation network adapted to the demand, we could reduce personal vehicles and energy consumption. A smart city could use models to predict the consequences of a change, such as pedestrianizing a street or adding a bike lane. A city can even create a 3D digital twin to test hypothetical projects. This book comprises many state-of-the-art contributions from scientists and practitioners working in machine intelligence and green smart cities. It aspires to provide a relevant reference for students, researchers, engineers, and professionals working in this area or those interested in grasping its diverse facets and exploring the latest advances in machine intelligence for green and sustainable smart city applications.

Computational Intelligence Techniques for Combating COVID-19 Jul 01 2020 This book presents the latest cutting edge research, theoretical methods, and novel applications in the field of computational intelligence and computational biological approaches that are aiming to combat COVID-19. The book gives the technological key drivers behind using AI to

find drugs that target the virus, shedding light on the structure of COVID-19, detecting the outbreak and spread of new diseases, spotting signs of a COVID-19 infection in medical images, monitoring how the virus and lockdown is affecting mental health, and forecasting how COVID-19 cases and deaths will spread across cities and why. Further, the book helps readers understand computational intelligence techniques combating COVID-19 in a simple and systematic way.

Pattern Recognition and Computational Intelligence Techniques Using Matlab Jun 12 2021 This book presents the complex topic of using computational intelligence for pattern recognition in a straightforward and applicable way, using Matlab to illustrate topics and concepts. The author covers computational intelligence tools like particle swarm optimization, bacterial foraging, simulated annealing, genetic algorithm, and artificial neural networks. The Matlab based illustrations along with the code are given for every topic. Readers get a quick basic understanding of various pattern recognition techniques using only the required depth in math. The Matlab program and algorithm are given along with the running text, providing clarity and usefulness of the various techniques. Presents pattern recognition and the computational intelligence using Matlab; Includes mixtures of theory, math, and algorithms, letting readers understand the concepts quickly; Outlines an array of classifiers, various regression models, statistical tests and the techniques for pattern recognition using computational intelligence.

Computational Intelligence Techniques for Decision Making Apr 29 2020

Artificial Intelligence Techniques for Computer Graphics Mar 21 2022 The purpose of this volume is to present current work of the Intelligent Computer Graphics community, a community growing up year after year. Indeed, if at the beginning of Computer Graphics the use of Artificial Intelligence techniques was quite unknown, more and more researchers all over the world are nowadays interested in intelligent techniques allowing substantial improvements of traditional Computer Graphics methods. The other main contribution of intelligent techniques in Computer Graphics is to allow invention of completely new methods, often based on automation of a lot of tasks assumed in the past by the user in an imprecise and (human) time consuming manner. The history of research in Computer Graphics is very edifying. At the beginning, due to the slowness of computers in the years 1960, the unique research concern was visualisation. The purpose of Computer Graphics researchers was to find new visualisation algorithms, less and less time consuming, in order to reduce the enormous time required for visualisation. A lot of interesting algorithms were invented during these first years of research in Computer Graphics. The scenes to be displayed were very simple because the computing power of computers was very low. So, scene modelling was not necessary and scenes were designed directly by the user, who had to give coordinates of vertices of scene polygons. *Computational Intelligence Techniques for Smart Cities* Nov 05 2020 Thanks to rapid technological developments in terms of Computational Intelligence - smart tools have

been taking active roles in daily life. It is clear that the 21st century has brought many advantages of using high level computation and communication solutions to deal with real world problems. However, more technologies bring more changes to society. In this sense, the concept of smart city has been a widely discussed topic in terms of society and Artificial Intelligence oriented research efforts. The rise of smart cities is somewhat a transformation of both communities and technology use habits and surely, there are many different research orientations to shape a better future. The objective of this book is to focus on Explainable Artificial Intelligence (XAI) in smart city development. As recently designed advanced smart systems require intense use of complex computational solutions (i.e., Deep Learning, big IoT architectures), mechanisms of these systems become black-box to the users. As black-box level means no clear clue about what is going on within these systems, anxieties regarding ensuring trustworthy tools also rise. In recent years, attempts have been made to solve this issue with additional use of XAI methods to improve transparency levels. This book provides a timely, global reference source about cutting edge research efforts to ensure the XAI factor in smart city-oriented developments. The book includes both positive and negative outcomes as well as future insights and both societal and technical aspects of XAI based smart city research efforts. This book contains nineteen contributions classified into seven main sections. Section I presents a background related to both concepts: Explainable Artificial Intelligence (XAI) techniques and sustainable smart city applications. Section II, XAI for Smart Healthcare, provides some chapters related to smart healthcare based on XAI techniques. Section III, XAI for Smart Education, explores the exploitation of XAI techniques in the context of smart education. Section IV, XAI for Smart Transportation, covers the various solutions that can contribute to improve smart transportation. Section V, XAI for Smart Environment, provides two chapters that can contribute to improve smart environment. Section VI of this book is about a smart urbanization and governance. A few chapters are fully dedicated to the use of XAI techniques for urbanization and governance. Finally, the last Section, Cyber Security and XAI for Smart Cities covers the latest architectures, and applications of XAI for cybersecurity and privacy in smart cities.

Practical Applications of Computational Intelligence Techniques Sep 15 2021

Computational intelligence paradigms have attracted the growing interest of researchers, scientists, engineers and application engineers in a number of everyday applications. These applications are not limited to any particular field and include engineering, business, banking and consumer electronics. Computational intelligence paradigms include artificial intelligence, artificial neural networks, fuzzy systems and evolutionary computing. Artificial neural networks can mimic the biological information processing mechanism in a very limited sense. Evolutionary computing algorithms are used for optimisation applications, and fuzzy logic provides a basis for representing uncertain and imprecise

knowledge. Practical Applications of Computational Intelligence Techniques contains twelve chapters providing actual application of these techniques in the real world. Such examples include, but are not limited to, intelligent household appliances, aerial spray models, industrial applications and medical diagnostics and practice. This book will be useful to researchers, practicing engineers/scientists and students, who are interested in developing practical applications in a computational intelligence environment.

New Perspectives on Enterprise Decision-Making Applying Artificial Intelligence

Techniques Oct 04 2020 This book presents different techniques and methodologies that used to help improve the decision-making process and increase the likelihood of success in sector as follows: agriculture, financial services, logistics, energy services, health and others. This book collects and consolidates innovative and high-quality research contributions regarding the implementation techniques and methodologies applied in different industrial sectors. The scope is to disseminate current trends knowledge in the implementation of artificial intelligence techniques and methodologies in different fields as follows: supply chain, business intelligence, e-commerce, social media and others. The book contents are useful for Ph.D., Ph.D. students, master and undergraduate students, and professional and students in industrial engineering, computer science, information systems, data analytics and others.

Artificial Intelligence and Industrial

Applications Jul 25 2022 This book gathers selected papers from Artificial Intelligence and Industrial Applications (A2IA'2020), the first installment of an annual international conference organized by ENSAM-Meknes at Moulay Ismail University, Morocco. The 29 papers presented here were carefully reviewed and selected from 141 submissions by an international scientific committee. They address various aspects of artificial intelligence such as digital twin, multiagent systems, deep learning, image processing and analysis, control, prediction, modeling, optimization and design, as well as AI applications in industry, health, energy, agriculture, and education. The book is intended for AI experts, offering them a valuable overview and global outlook for the future, and highlights a wealth of innovative ideas and recent, important advances in AI applications, both of a foundational and practical nature. It will also appeal to non-

experts who are curious about this timely and important subject.

Applications of Artificial Intelligence

Techniques in Engineering Dec 06 2020 The book is a collection of high-quality, peer-reviewed innovative research papers from the International Conference on Signals, Machines and Automation (SIGMA 2018) held at Netaji Subhas Institute of Technology (NSIT), Delhi, India. The conference offered researchers from academic and industry the opportunity to present their original work and exchange ideas, information, techniques and applications in the field of computational intelligence, artificial intelligence and machine intelligence. The book is divided into two volumes discussing a wide variety of industrial, engineering and scientific applications of the emerging techniques.

Open Source Intelligence Techniques Sep 27 2022 It is time to look at OSINT in a different way. For many years, and within the previous editions of this book, we have relied on external resources to supply our search tools, virtual environments, and investigation techniques. We have seen this protocol fail us when services shut down, websites disappear, and custom resources are dismantled due to outside pressures. This book aims to correct our dilemma. We will take control of our investigative resources and become self-reliant. There will be no more need for online search tools; we will make and host our own locally. We will no longer seek pre-built virtual machines; we will create and configure our own. This book puts the power back in your hands.

Smart Computational Intelligence in Biomedical and Health Informatics Jan 07 2021 Smart Computational Intelligence in Biomedical and Health Informatics presents state-of-the-art innovations; research, design, and implementation of methodological and algorithmic solutions to data processing problems, including analysis of evolving trends in health informatics and computer-aided diagnosis. This book describes practical, applications-led research regarding the use of methods and devices in clinical diagnosis, disease prevention, and patient monitoring and management. It also covers simulation and modeling, measurement and control, analysis, information extraction and monitoring of physiological data in clinical medicine and the biological sciences. **FEATURES** Covers evolutionary approaches to solve optimization problems in biomedical engineering Discusses IoT, Cloud computing, and data analytics in healthcare informatics Provides computational

intelligence-based solution for diagnosis of diseases Reviews modelling and simulations in designing of biomedical equipment Promotes machine learning-based approaches to improvements in biomedical engineering problems This book is for researchers, graduate students in healthcare, biomedical engineers, and those interested in health informatics, computational intelligence, and machine learning.

Combating Fake News with Computational Intelligence Techniques

Nov 17 2021 This book presents the latest cutting-edge research, theoretical methods, and novel applications in the field of computational intelligence techniques and methods for combating fake news. Fake news is everywhere. Despite the efforts of major social network players such as Facebook and Twitter to fight disinformation, miracle cures and conspiracy theories continue to rain down on the net. Artificial intelligence can be a bulwark against the diversity of fake news on the Internet and social networks. This book discusses new models, practical solutions, and technological advances related to detecting and analyzing fake news based on computational intelligence models and techniques, to help decision-makers, managers, professionals, and researchers design new paradigms considering the unique opportunities associated with computational intelligence techniques. Further, the book helps readers understand computational intelligence techniques combating fake news in a systematic and straightforward way.

Intelligent Techniques for Planning Apr 10

2021 The Intelligent Techniques for Planning presents a number of modern approaches to the area of automated planning. These approaches combine methods from classical planning such as the construction of graphs and the use of domain-independent heuristics with techniques from other areas of artificial intelligence. This book discusses, in detail, a number of state-of-the-art planning systems that utilize constraint satisfaction techniques in order to deal with time and resources, machine learning in order to utilize experience drawn from past runs, methods from knowledge systems for more expressive representation of knowledge and ideas from other areas such as Intelligent Agents. Apart from the thorough analysis and implementation details, each chapter of the book also provides extensive background information about its subject and presents and comments on similar approaches done in the past.