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Proceedings of the International Conference on Advanced Intelligent Systems and Informatics 2017 - Aboul Ella Hassanien 2017-08-30

This book gathers the proceedings of the 3rd International Conference on Advanced Intelligent Systems and Informatics 2017 (AISI2017), which took place in Cairo, Egypt from September 9 to 11, 2017. This international and interdisciplinary conference, which highlighted essential research and developments in the field of informatics and intelligent systems, was organized by the Scientific Research Group in Egypt (SRGE). The book's content is divided into five main sections: Intelligent Language Processing, Intelligent Systems, Intelligent Robotics Systems, Informatics, and the Internet of Things.

**Advanced Computational Methods for Knowledge Engineering** - Hoai An Le Thi 2019-12-19

This proceedings book contains 37 papers selected from the submissions to the 6th International Conference on Computer Science, Applied Mathematics and Applications (ICCSAMA 2019), which was held on 19-20 December, 2019, in Hanoi, Vietnam. The book covers theoretical and algorithmic as well as practical issues connected with several domains of Applied Mathematics and Computer Science, especially Optimization and Data Science. The content is divided into four major sections: Nonconvex Optimization, DC Programming & DCA, and Applications; Data Mining and Data Processing; Machine Learning Methods and Applications; and Knowledge Information and Engineering Systems. Researchers and practitioners in related areas will find a wealth of inspiring ideas and useful tools & techniques for their own work.

**Computational Intelligence, Cyber Security and Computational Models** - G. Sai Sundara Krishnan 2013-11-26

This book contains cutting-edge research material presented by researchers, engineers, developers, and practitioners from academia and industry at the International Conference on Computational Intelligence, Cyber Security and Computational Models (ICC3) organized by PSG College of Technology, Coimbatore, India during December 19-21, 2013. The materials in the book include theory and applications to provide design, analysis, and modeling of the key areas. The book will be useful material for students, researchers, professionals, as well academicians in understanding current research trends and findings and future scope of research in computational intelligence, cyber security, and computational models.

**Recent Trends and Advances in Artificial Intelligence and Internet of Things** - Valentina E. Balas 2019-11-19

This book covers all the emerging trends in artificial intelligence (AI) and the Internet of Things (IoT). The Internet of Things is a term that has been introduced in recent years to define devices that are able to connect and transfer data to other devices via the Internet. While IoT and sensors have the ability to harness large volumes of data, AI can learn patterns in the data and quickly extract insights in order to automate tasks for a variety of business benefits. Machine learning, an AI technology, brings the ability to automatically identify patterns and detect anomalies in the data that smart sensors and devices generate, and it can have significant advantages over traditional business intelligence tools for analyzing IoT data, including being able to make operational predictions up to 20 times earlier and with greater accuracy than threshold-based monitoring systems. Further, other AI technologies, such as speech recognition and computer vision can help extract insights from data that used to require human review. The powerful

combination of AI and IoT technology is helping to avoid unplanned downtime, increase operating efficiency, enable new products and services, and enhance risk management.

**Artificial Intelligence for the Internet of Health Things** - K. Shankar 2021-05-10

This book discusses research in Artificial Intelligence for the Internet of Health Things. It investigates and explores the possible applications of machine learning, deep learning, soft computing, and evolutionary computing techniques in design, implementation, and optimization of challenging healthcare solutions. This book features a wide range of topics such as AI techniques, IoT, cloud, wearables, and secured data transmission. Written for a broad audience, this book will be useful for clinicians, health professionals, engineers, technology developers, IT consultants, researchers, and students interested in the AI-based healthcare applications. Provides a deeper understanding of key AI algorithms and their use and implementation within the wider healthcare sector Explores different disease diagnosis models using machine learning, deep learning, healthcare data analysis, including machine learning, and data mining and soft computing algorithms Discusses detailed IoT, wearables, and cloud-based disease diagnosis model for intelligent systems and healthcare Reviews different applications and challenges across the design, implementation, and management of intelligent systems and healthcare data networks Introduces a new applications and case studies across all areas of AI in healthcare data K. Shankar (Member, IEEE) is a Postdoctoral Fellow of the Department of Computer Applications, Alagappa University, Karaikudi, India. Eswaran Perumal is an Assistant Professor of the Department of Computer Applications, Alagappa University, Karaikudi, India. Dr. Deepak Gupta is an Assistant Professor of the Department Computer Science & Engineering, Maharaja Agrasen Institute of Technology (GGSIPU), Delhi, India.

**Innovations for Community Services** - Michal Hodoň 2018-06-05

This book constitutes the refereed proceedings of the 18th International Conference on Innovations for Community Services, I4CS 2018, held in Žilina, Slovakia, in June 2018. The 14 revised full papers and the three revised short papers presented in this volume were carefully reviewed and selected from 38 submissions. The papers are organized in topical sections on architectures and management; data analytics and models; community and public collaboration; innovations and digital transformation.

**Biometric Recognition** - Jinfeng Yang 2015-10-23

This book constitutes the refereed proceedings of the 10th Chinese Conference on Biometric Recognition, CCBR 2015, held in Tianjin, China, in November 2015. The 85 revised full papers presented were carefully reviewed and selected from among 120 submissions. The papers focus on face, fingerprint and palmprint, vein biometrics, iris and ocular biometrics, behavioral biometrics, application and system of biometrics, multi-biometrics and information fusion, other biometric recognition and processing.

**Expert System Techniques in Biomedical Science Practice** - Pattnaik, Prasant Kumar 2018-06-01

Before the integration of expert systems in biomedical science, complex problems required human expertise to solve them through conventional procedural methods. Advancements in expert systems allow for knowledge to be extracted when no human expertise is available and increases productivity through quick diagnosis. Expert System Techniques in Biomedical Science Practice is an essential scholarly resource that contains innovative research on the methods by which an expert system is designed to solve

complex problems through the automation of decision making through the use of if-then-else rules rather than conventional procedural methods. Featuring coverage on a broad range of topics such as image processing, bio-signals, and cognitive AI, this book is a vital reference source for computer engineers, information technologists, biomedical engineers, data-processing specialists, medical professionals, and industrialists within the fields of biomedical engineering, pervasive computing, and natural language processing.

**Advances in Neural Networks - ISSN 2006 - 2006**

**Neural Information Processing** - Haiqin Yang 2020-11-18

The two-volume set CCIS 1332 and 1333 constitutes thoroughly refereed contributions presented at the 27th International Conference on Neural Information Processing, ICONIP 2020, held in Bangkok, Thailand, in November 2020.\* For ICONIP 2020 a total of 378 papers was carefully reviewed and selected for publication out of 618 submissions. The 191 papers included in this volume set were organized in topical sections as follows: data mining; healthcare analytics-improving healthcare outcomes using big data analytics; human activity recognition; image processing and computer vision; natural language processing; recommender systems; the 13th international workshop on artificial intelligence and cybersecurity; computational intelligence; machine learning; neural network models; robotics and control; and time series analysis. \* The conference was held virtually due to the COVID-19 pandemic.

**Computer Supported Cooperative Work and Social Computing** - Yuqing Sun 2019-11-13

This book constitutes the refereed proceedings of the 14th CCF Conference on Computer Supported Cooperative Work and Social Computing, ChineseCSCW 2019, held in Kunming, China, in August 2019. The 52 revised full papers and 10 short papers were carefully reviewed and selected from 169 submissions. The papers of this volume are organized in topical sections on: collaborative models, approaches, algorithms, and systems; social computing (online communities, crowdsourcing, recommendation, sentiment analysis, etc.); AI for CSCW and social computing.

**Knowledge-Based Intelligent Information and Engineering Systems** - Rajiv Khosla 2005-08-30

Annotation The four volume set LNAI 3681, LNAI 3682, LNAI 3683, and LNAI 3684 constitute the refereed proceedings of the 9th International Conference on Knowledge-Based Intelligent Information and Engineering Systems, KES2005, held in Melbourne, Australia in September 2005. The 716 revised papers presented were carefully reviewed and selected from nearly 1400 submissions. The papers present a wealth of original research results from the field of intelligent information processing in the broadest sense; topics covered in the first volume are intelligent design support systems, data engineering, knowledge engineering and ontologies, knowledge discovery and data mining, advanced network application, approaches and methods of security engineering, chance discovery, information hiding and multimedia signal processing, soft computing techniques and their applications, intelligent agent technology and applications, smart systems, knowledge - based interfaces systems, intelligent information processing for remote sensing, intelligent human computer interaction systems, experience management and knowledge management, network (security) real-time and fault tolerant systems, advanced network application and real-time systems, and intelligent watermarking algorithms.

**Artificial Neural Networks and Machine Learning -- ICANN 2012** - Alessandro Villa 2012-09-19

The two-volume set LNCS 7552 + 7553 constitutes the proceedings of the 22nd International Conference on Artificial Neural Networks, ICANN 2012, held in Lausanne, Switzerland, in September 2012. The 162 papers included in the proceedings were carefully reviewed and selected from 247 submissions. They are organized in topical sections named: theoretical neural computation; information and optimization; from neurons to neuromorphism; spiking dynamics; from single neurons to networks; complex firing patterns; movement and motion; from sensation to perception; object and face recognition; reinforcement learning; bayesian and echo state networks; recurrent neural networks and reservoir computing; coding architectures; interacting with the brain; swarm intelligence and decision-making; multilayer perceptrons and kernel networks; training and learning; inference and recognition; support vector machines; self-organizing maps and clustering; clustering, mining and exploratory analysis; bioinformatics; and time series and forecasting.

**Rough Sets, Fuzzy Sets, Data Mining, and Granular Computing** - Dominik Ślęzak 2005

This volume contains the papers selected for presentation at the 10th International Conference on Rough Sets, Fuzzy Sets, Data Mining, and Granular Computing, RSFDGrC 2005, organized at the University of Regina, August 31st-September 3rd, 2005.

**Pattern Recognition in Bioinformatics** - Tetsuo Shibuya 2012-11-04

This book constitutes the refereed proceedings of the 7th International Conference on Pattern Recognition in Bioinformatics, PRIB 2012, held in Tokyo, Japan, in November 2012. The 24 revised full papers presented were carefully reviewed and selected from 33 submissions. Their topics are widely ranging from fundamental techniques, sequence analysis to biological network analysis. The papers are organized in topical sections on generic methods, visualization, image analysis, and platforms, applications of pattern recognition techniques, protein structure and docking, complex data analysis, and sequence analysis.

**Inductive Inference for Large Scale Text Classification** - Catarina Silva 2009-11-13

Text classification is becoming a crucial task to analysts in different areas. In the last few decades, the production of textual documents in digital form has increased exponentially. Their applications range from web pages to scientific documents, including emails, news and books. Despite the widespread use of digital texts, handling them is inherently difficult - the large amount of data necessary to represent them and the subjectivity of classification complicate matters. This book gives a concise view on how to use kernel approaches for inductive inference in large scale text classification; it presents a series of new techniques to enhance, scale and distribute text classification tasks. It is not intended to be a comprehensive survey of the state-of-the-art of the whole field of text classification. Its purpose is less ambitious and more practical: to explain and illustrate some of the important methods used in this field, in particular kernel approaches and techniques.

**Soft Computing Models in Industrial and Environmental Applications, 6th International Conference SOCO 2011** - Emilio Corchado 2011-03-04

This volume of Advances in Intelligent and Soft Computing contains accepted papers presented at SOCO 2011 held in the beautiful and historic city of Salamanca, Spain, April 2011. This volume presents the papers accepted for the 2011 edition, both for the main event and the Special Sessions. SOCO 2011 Special Sessions are a very useful tool in order to complement the regular program with new or emerging topics of particular interest to the participating community. Four special sessions were organized related to relevant topics as: Optimization and Control in Industry, Speech Processing and Soft Computing, Systems, Man & Cybernetics and Soft Computing for Medical Applications.

**Modern Approaches for Intelligent Information and Database Systems** - Andrzej Sieminski 2018-02-23

This book offers a unique blend of reports on both theoretical models and their applications in the area of Intelligent Information and Database Systems. The reports cover a broad range of research topics, including advanced learning techniques, knowledge engineering, Natural Language Processing (NLP), decision support systems, Internet of things (IoT), computer vision, and tools and techniques for Intelligent Information Systems. They are extended versions of papers presented at the ACIIDS 2018 conference (10th Asian Conference on Intelligent Information and Database Systems), which was held in Dong Hoi City, Vietnam on 19-21 March 2018. What all researchers and students of computer science need is a state-of-the-art report on the latest trends in their respective areas of interest. Over the years, researchers have proposed increasingly complex theoretical models, which provide the theoretical basis for numerous applications. The applications, in turn, have a profound influence on virtually every aspect of human activities, while also allowing us to validate the underlying theoretical concepts.

**Machine Learning for Networking** - Selma Boumerdassi 2020-04-19

This book constitutes the thoroughly refereed proceedings of the Second International Conference on Machine Learning for Networking, MLN 2019, held in Paris, France, in December 2019. The 26 revised full papers included in the volume were carefully reviewed and selected from 75 submissions. They present and discuss new trends in deep and reinforcement learning, pattern recognition and classification for networks, machine learning for network slicing optimization, 5G system, user behavior prediction, multimedia, IoT, security and protection, optimization and new innovative machine learning methods, performance analysis of machine learning algorithms, experimental evaluations of machine learning, data mining in heterogeneous

networks, distributed and decentralized machine learning algorithms, intelligent cloud-support communications, resource allocation, energy-aware communications, software defined networks, cooperative networks, positioning and navigation systems, wireless communications, wireless sensor networks, underwater sensor networks.

**Proceedings of the International Conference on Signal, Networks, Computing, and Systems** - Daya K. Lobiyal 2016-10-13

The book is a collection of high-quality peer-reviewed research papers presented in the first International Conference on Signal, Networks, Computing, and Systems (ICSNCS 2016) held at Jawaharlal Nehru University, New Delhi, India during February 25-27, 2016. The book is organized in two volumes and primarily focuses on theory and applications in the broad areas of communication technology, computer science and information security. The book aims to bring together the latest scientific research works of academic scientists, professors, research scholars and students in the areas of signal, networks, computing and systems detailing the practical challenges encountered and the solutions adopted.

**Neural Information Processing** - Chi-Sing Leung 2009-11-24

The two volumes LNCS 5863 and 5864 constitute the proceedings of the 16th International Conference on Neural Information Processing, ICONIP 2009, held in Bangkok, Thailand, in December 2009. The 145 regular session papers and 53 special session papers presented were carefully reviewed and selected from 466 submissions. The papers are structured in topical sections on cognitive science and computational neuroscience, neurodynamics, mathematical modeling and analysis, kernel and related methods, learning algorithms, pattern analysis, face analysis and processing, image processing, financial applications, computer vision, control and robotics, evolutionary computation, other emerging computational methods, signal, data and text processing, artificial spiking neural systems: nonlinear dynamics and engineering applications, towards brain-inspired systems, computational advances in bioinformatics, data mining for cybersecurity, evolutionary neural networks: theory and practice, hybrid and adaptive systems for computer vision and robot control, intelligent data mining, neural networks for data mining, and SOM and related subjects and its applications.

**Illumination of Artificial Intelligence in Cybersecurity and Forensics** - Sanjay Misra 2022

This book covers a variety of topics that span from industry to academics: hybrid AI model for IDS in IoT, intelligent authentication framework for IoMT mobile devices for extracting bioelectrical signals, security audit in terms of vulnerability analysis to protect the electronic medical records in healthcare system using AI, classification using CNN a multi-face recognition attendance system with anti-spoofing capability, challenges in face morphing attack detection, a dimensionality reduction and feature-level fusion technique for morphing attack detection (MAD) systems, findings and discussion on AI-assisted forensics, challenges and open issues in the application of AI in forensics, a terrorist computational model that uses Baum-Welch optimization to improve the intelligence and predictive accuracy of the activities of criminal elements, a novel method for detecting security violations in IDSs, graphical-based city block distance algorithm method for E-payment systems, image encryption, and AI methods in ransomware mitigation and detection. It assists the reader in exploring new research areas, wherein AI can be applied to offer solutions through the contribution from researchers and academia.

**Advanced Multimedia and Ubiquitous Engineering** - James J. (Jong Hyuk) Park 2017-05-11

This book presents the proceedings of the 11th International Conference on Multimedia and Ubiquitous Engineering (MUE2017) and the 12th International Conference on Future Information Technology (FutureTech2017), held in Seoul, South Korea on May 22-24, 2017. These two conferences provided an opportunity for academic and industrial professionals to discuss recent advances in the area of multimedia and ubiquitous environments including models and systems, new directions, and novel applications associated with the utilization and acceptance of ubiquitous computing devices and systems. The resulting papers address the latest technological innovations in the fields of digital convergence, multimedia convergence, intelligent applications, embedded systems, mobile and wireless communications, bio-inspired computing, grid and cloud computing, semantic web, user experience, HCI, and security and trust computing. The book offers a valuable resource for a broad readership, including students, academic researchers, and professionals. Further, it provides an overview of current research and a "snapshot" for

those new to the field.

**Handbook of Computational Intelligence in Biomedical Engineering and Healthcare** - Janmenjoy Nayak 2021-04-08

Handbook of Computational Intelligence in Biomedical Engineering and Healthcare helps readers analyze and conduct advanced research in specialty healthcare applications surrounding oncology, genomics and genetic data, ontologies construction, bio-memetic systems, biomedical electronics, protein structure prediction, and biomedical data analysis. The book provides the reader with a comprehensive guide to advanced computational intelligence, spanning deep learning, fuzzy logic, connectionist systems, evolutionary computation, cellular automata, self-organizing systems, soft computing, and hybrid intelligent systems in biomedical and healthcare applications. Sections focus on important biomedical engineering applications, including biosensors, enzyme immobilization techniques, immuno-assays, and nanomaterials for biosensors and other biomedical techniques. Other sections cover gene-based solutions and applications through computational intelligence techniques and the impact of nonlinear/unstructured data on experimental analysis. Presents a comprehensive handbook that covers an Introduction to Computational Intelligence in Biomedical Engineering and Healthcare, Computational Intelligence Techniques, and Advanced and Emerging Techniques in Computational Intelligence Helps readers analyze and do advanced research in specialty healthcare applications Includes links to websites, videos, articles and other online content to expand and support primary learning objectives

**Artificial Intelligence Techniques for Satellite Image Analysis** - D. Jude Hemanth 2019-11-13

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.

**The Future of Hyperspectral Imaging** - Stefano Selci 2019-11-20

This book includes some very recent applications and the newest emerging trends of hyper-spectral imaging (HSI). HSI is a very recent and strange beast, a sort of a melting pot of previous techniques and scientific interests, merging and concentrating the efforts of physicists, chemists, botanists, biologists, and physicians, to mention just a few, as well as experts in data crunching and statistical elaboration. For almost a century, scientific observation, from looking to planets and stars down to our own cells and below, could be divided into two main categories: analyzing objects on the basis of their physical dimension (recording size, position, weight, etc. and their variations) or on how the object emits, reflects, or absorbs part of the electromagnetic spectrum, i.e., spectroscopy. While the two aspects have been obviously entangled, instruments and skills have always been clearly distinct from each other. With HSI now available, this is no longer the case. This instrument can return specimen dimensionalities and spectroscopic properties to any single pixel of your specimen, in a single set of data. HSI modality is ubiquitous and scale-invariant enough to be used to mark terrestrial resources on the basis of a land map obtained from satellite observation (actually, the oldest application of this type) or to understand if the cell you are looking at is cancerous or perfectly healthy. For all these reasons, HSI represents one of the most exciting methodologies of the new millennium.

**Machine Learning in Bio-Signal Analysis and Diagnostic Imaging** - Nilanjan Dey 2018-11-30

Machine Learning in Bio-Signal Analysis and Diagnostic Imaging presents original research on the advanced analysis and classification techniques of biomedical signals and images that cover both supervised and unsupervised machine learning models, standards, algorithms, and their applications, along with the difficulties and challenges faced by healthcare professionals in analyzing biomedical signals and diagnostic images. These intelligent recommender systems are designed based on machine learning, soft computing, computer vision, artificial intelligence and data mining techniques. Classification and clustering techniques, such as PCA, SVM, techniques, Naive Bayes, Neural Network, Decision trees, and Association Rule Mining are among the approaches presented. The design of high accuracy decision support systems

assists and eases the job of healthcare practitioners and suits a variety of applications. Integrating Machine Learning (ML) technology with human visual psychometrics helps to meet the demands of radiologists in improving the efficiency and quality of diagnosis in dealing with unique and complex diseases in real time by reducing human errors and allowing fast and rigorous analysis. The book's target audience includes professors and students in biomedical engineering and medical schools, researchers and engineers.

Examines a variety of machine learning techniques applied to bio-signal analysis and diagnostic imaging. Discusses various methods of using intelligent systems based on machine learning, soft computing, computer vision, artificial intelligence and data mining. Covers the most recent research on machine learning in imaging analysis and includes applications to a number of domains.

Hybrid Artificial Intelligent Systems - Emilio S. Corchado Rodriguez 2012-03-15

The two LNAI volumes 7208 and 7209 constitute the proceedings of the 7th International Conference on Hybrid Artificial Intelligent Systems, HAIS 2012, held in Salamanca, Spain, in March 2012. The 118 papers published in these proceedings were carefully reviewed and selected from 293 submissions. They are organized in topical sessions on agents and multi agents systems, HAIS applications, cluster analysis, data mining and knowledge discovery, evolutionary computation, learning algorithms, systems, man, and cybernetics by HAIS workshop, methods of classifier fusion, HAIS for computer security (HAISFCS), data mining: data preparation and analysis, hybrid artificial intelligence systems in management of production systems, hybrid artificial intelligent systems for ordinal regression, hybrid metaheuristics for combinatorial optimization and modelling complex systems, hybrid computational intelligence and lattice computing for image and signal processing and nonstationary models of pattern recognition and classifier combinations.

**Advanced Data Mining and Applications** - Shuigeng Zhou 2012-12-09

This book constitutes the refereed proceedings of the 8th International Conference on Advanced Data Mining and Applications, ADMA 2012, held in Nanjing, China, in December 2012. The 32 regular papers and 32 short papers presented in this volume were carefully reviewed and selected from 168 submissions. They are organized in topical sections named: social media mining; clustering; machine learning: algorithms and applications; classification; prediction, regression and recognition; optimization and approximation; mining time series and streaming data; Web mining and semantic analysis; data mining applications; search and retrieval; information recommendation and hiding; outlier detection; topic modeling; and data cube computing.

Large Scale Hierarchical Classification: State of the Art - Azad Naik 2018-10-09

This SpringerBrief covers the technical material related to large scale hierarchical classification (LSHC). HC is an important machine learning problem that has been researched and explored extensively in the past few years. In this book, the authors provide a comprehensive overview of various state-of-the-art existing methods and algorithms that were developed to solve the HC problem in large scale domains. Several challenges faced by LSHC is discussed in detail such as: 1. High imbalance between classes at different levels of the hierarchy 2. Incorporating relationships during model learning leads to optimization issues 3. Feature selection 4. Scalability due to large number of examples, features and classes 5. Hierarchical inconsistencies 6. Error propagation due to multiple decisions involved in making predictions for top-down methods. The brief also demonstrates how multiple hierarchies can be leveraged for improving the HC performance using different Multi-Task Learning (MTL) frameworks. The purpose of this book is two-fold: 1. Help novice researchers/beginners to get up to speed by providing a comprehensive overview of several existing techniques. 2. Provide several research directions that have not yet been explored extensively to advance the research boundaries in HC. New approaches discussed in this book include detailed information corresponding to the hierarchical inconsistencies, multi-task learning and feature selection for HC. Its results are highly competitive with the state-of-the-art approaches in the literature.

Biomedical Imaging and Computational Modeling in Biomechanics - Ugo Andreaus 2012-10-09

This book collects the state-of-art and new trends in image analysis and biomechanics. It covers a wide field of scientific and cultural topics, ranging from remodeling of bone tissue under the mechanical stimulus up to optimizing the performance of sports equipment, through the patient-specific modeling in orthopedics, microtomography and its application in oral and implant research, computational modeling in the field of hip prostheses, image based model development and analysis of the human knee joint, kinematics of the hip

joint, micro-scale analysis of compositional and mechanical properties of dentin, automated techniques for cervical cell image analysis, and biomedical imaging and computational modeling in cardiovascular disease. The book will be of interest to researchers, Ph.D students, and graduate students with multidisciplinary interests related to image analysis and understanding, medical imaging, biomechanics, simulation and modeling, experimental analysis

Machine Learning in Cancer Research With Applications in Colon Cancer and Big Data Analysis - Lu, Zhongyu 2021-05-28

Cancer continues to be a growing problem as it is the foremost cause of death worldwide, killing millions of people each year. The number of people battling cancer continues to increase, owing to different reasons, such as lifestyle choices. Clinically, determining the cause of cancer is very challenging and often inaccurate. Incorporating efficient and accurate algorithms to detect cancer cases is becoming increasingly beneficial for scientists in computer science and healthcare, as well as a long-term benefit for doctors, patients, clinic practitioners, and more. Specifically, an automation of computation in machine learning could be a solution in the next generation of big data science technology. Machine Learning in Cancer Research With Applications in Colon Cancer and Big Data Analysis presents algorithms that have been developed to evaluate big data approaches and cancer research. The chapters include artificial intelligence and machine learning approaches, as well as case studies to solve the predictive issues in colon cancer research. This book includes concepts and techniques used to run tasks in an automated manner with the intent to improve better accuracy in comparison with previous studies and methods. This book also covers the processes of research design, development, and outcome analytics in this field. Doctors, IT consultants, IT specialists, medical software professionals, data scientists, researchers, computer scientists, healthcare practitioners, academicians, and students can benefit from this critical resource.

Rough Sets, Fuzzy Sets, Data Mining, and Granular Computing - Dominik Slezak 2005-09-14

This volume contains the papers selected for presentation at the 10th International Conference on Rough Sets, Fuzzy Sets, Data Mining, and Granular Computing, RSFDGrC 2005, organized at the University of Regina, August 31st-September 3rd, 2005. This conference followed in the footsteps of international events devoted to the subject of rough sets, held so far in Canada, China, Japan, Poland, Sweden, and the USA. RSFDGrC achieved the status of biennial international conference, starting from 2003 in Chongqing, China. The theory of rough sets, proposed by Zdzislaw Pawlak in 1982, is a model of approximate reasoning. The main idea is based on indiscernibility relations that describe indistinguishability of objects. Concepts are represented by approximations. In applications, rough set methodology focuses on approximate representation of knowledge derivable from data. It leads to significant results in many areas such as finance, industry, multimedia, and medicine. The RSFDGrC conferences put an emphasis on connections between rough sets and fuzzy sets, granular computing, and knowledge discovery and data mining, both at the level of theoretical foundations and real-life applications. In the case of this event, additional effort was made to establish a linkage towards a broader range of applications. We achieved it by including in the conference program the workshops on bioinformatics, security engineering, and embedded systems, as well as tutorials and sessions related to other application areas.

Advances in Neural Networks - ISNN 2006 - Jun Wang 2006-05-10

This is Volume II of a three volume set constituting the refereed proceedings of the Third International Symposium on Neural Networks, ISNN 2006. 616 revised papers are organized in topical sections on neurobiological analysis, theoretical analysis, neurodynamic optimization, learning algorithms, model design, kernel methods, data preprocessing, pattern classification, computer vision, image and signal processing, system modeling, robotic systems, transportation systems, communication networks, information security, fault detection, financial analysis, bioinformatics, biomedical and industrial applications, and more.

Proceedings of Trends in Electronics and Health Informatics - M. Shamim Kaiser 2022-03-21

This book includes selected peer-reviewed papers presented at the International Conference on Trends in Electronics and Health Informatics (TEHI 2021), organized by Department of Electronics and Communication Engineering and Department of Computer Science and Engineering, Pranveer Singh Institute of Technology Kanpur, India, during 16-17 December 2021. The book is broadly divided into five

sections—artificial intelligence and soft computing, healthcare informatics, Internet of things and data analytics, electronics, and communications.

**Digital Mapping of Soil Landscape Parameters** - Pradeep Kumar Garg 2020-02-20

This book addresses the mapping of soil-landscape parameters in the geospatial domain. It begins by discussing the fundamental concepts, and then explains how machine learning and geomatics can be applied for more efficient mapping and to improve our understanding and management of 'soil'. The judicious utilization of a piece of land is one of the biggest and most important current challenges, especially in light of the rapid global urbanization, which requires continuous monitoring of resource consumption. The book provides a clear overview of how machine learning can be used to analyze remote sensing data to monitor the key parameters, below, at, and above the surface. It not only offers insights into the approaches, but also allows readers to learn about the challenges and issues associated with the digital mapping of these parameters and to gain a better understanding of the selection of data to represent soil-landscape relationships as well as the complex and interconnected links between soil-landscape parameters under a range of soil and climatic conditions. Lastly, the book sheds light on using the network of satellite-based Earth observations to provide solutions toward smart farming and smart land management.

**Biologically Rationalized Computing Techniques For Image Processing Applications** - Jude Hemanth 2017-08-15

This book introduces readers to innovative bio-inspired computing techniques for image processing applications. It demonstrates how a significant drawback of image processing - not providing the simultaneous benefits of high accuracy and less complexity - can be overcome, proposing bio-inspired methodologies to help do so. Besides computing techniques, the book also sheds light on the various application areas related to image processing, and weighs the pros and cons of specific methodologies. Even though several such methodologies are available, most of them do not provide the simultaneous benefits of high accuracy and less complexity, which explains their low usage in connection with practical imaging applications, such as the medical scenario. Lastly, the book illustrates the methodologies in detail, making it suitable for newcomers to the field and advanced researchers alike.

*Research Anthology on Machine Learning Techniques, Methods, and Applications* - Management Association, Information Resources 2022-05-13

Machine learning continues to have myriad applications across industries and fields. To ensure this technology is utilized appropriately and to its full potential, organizations must better understand exactly

how and where it can be adapted. Further study on the applications of machine learning is required to discover its best practices, challenges, and strategies. The *Research Anthology on Machine Learning Techniques, Methods, and Applications* provides a thorough consideration of the innovative and emerging research within the area of machine learning. The book discusses how the technology has been used in the past as well as potential ways it can be used in the future to ensure industries continue to develop and grow. Covering a range of topics such as artificial intelligence, deep learning, cybersecurity, and robotics, this major reference work is ideal for computer scientists, managers, researchers, scholars, practitioners, academicians, instructors, and students.

**Handbook of Research on Deep Learning-Based Image Analysis Under Constrained and Unconstrained Environments** - Raj, Alex Noel Joseph 2020-12-25

Recent advancements in imaging techniques and image analysis has broadened the horizons for their applications in various domains. Image analysis has become an influential technique in medical image analysis, optical character recognition, geology, remote sensing, and more. However, analysis of images under constrained and unconstrained environments require efficient representation of the data and complex models for accurate interpretation and classification of data. Deep learning methods, with their hierarchical/multilayered architecture, allow the systems to learn complex mathematical models to provide improved performance in the required task. The *Handbook of Research on Deep Learning-Based Image Analysis Under Constrained and Unconstrained Environments* provides a critical examination of the latest advancements, developments, methods, systems, futuristic approaches, and algorithms for image analysis and addresses its challenges. Highlighting concepts, methods, and tools including convolutional neural networks, edge enhancement, image segmentation, machine learning, and image processing, the book is an essential and comprehensive reference work for engineers, academicians, researchers, and students.

**Computational Intelligence and Information Technology** - Vinu Das 2013-01-02

This book constitutes the proceedings of the First International Conference on Computational Intelligence and Information Technology, CIIT 2011, held in Pune, India, in November 2011. The 58 revised full papers, 67 revised short papers, and 32 poster papers presented were carefully reviewed and selected from 483 initial submissions. The papers are contributed by innovative academics and industrial experts in the field of computer science, information technology, computational engineering, mobile communication and security and offer a stage to a common forum, where a constructive dialog on theoretical concepts, practical ideas and results of the state of the art can be developed.