

BRAIN TUMOR DETECTION IN MEDICAL IMAGING USING MATLAB

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Soft Computing: Theories and Applications - Millie Pant 2020-02-24

The book focuses on soft computing and its applications to solve real-world problems in different domains, ranging from medicine and health care, to supply chain management, image processing and cryptanalysis. It includes high-quality papers presented at the International Conference on Soft Computing: Theories and Applications (SoCTA 2018), organized by Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Punjab, India. Offering significant insights into soft computing for teachers and researchers alike, the book inspires more researchers to work in the field of soft computing.

Medical Imaging: Concepts, Methodologies, Tools, and Applications - Management Association, Information Resources 2016-07-18

Medical imaging has transformed the ways in which various conditions, injuries, and diseases are identified, monitored, and treated. As various types of digital visual representations continue to advance and improve, new opportunities for their use in medical practice will likewise evolve. *Medical Imaging: Concepts, Methodologies, Tools, and Applications* presents a compendium of research on digital imaging technologies in a variety of healthcare settings. This multi-volume work contains practical examples of implementation, emerging trends, case studies, and technological innovations essential for using imaging technologies for making medical decisions. This comprehensive publication is an essential resource for medical practitioners, digital imaging technologists, researchers, and medical students.

Proceedings of the International Conference on Intelligent Systems and Signal Processing - Rahul Kher 2018-01-18

The book provides insights into International Conference on Intelligent Systems and Signal Processing (ISSP 2017) held at G.H. Patel College of Engineering & Technology, Gujarat, India during March 24-25, 2017. The book comprises contributions by the research scholars and academicians covering the topics in signal processing and communication engineering, applied electronics and emerging technologies, computer vision and machine learning, big data and cloud computing and advanced intelligent power electronics and drives systems. The main emphasis of the book is on dissemination of information, experience and research results on the current topics of interest through in-depth discussions and contribution of researchers from all over world. The book is useful for research community, academicians, industrialists and post graduate students across the globe.

Handbook of Research on Innovations and Applications of AI, IoT, and Cognitive Technologies - Zhao, Jingyuan 2021-06-25

Recently, artificial intelligence (AI), the internet of things (IoT), and cognitive technologies have successfully been applied to various research domains,

including computer vision, natural language processing, voice recognition, and more. In addition, AI with IoT has made a significant breakthrough and a shift in technical direction to achieve high efficiency and adaptability in a variety of new applications. On the other hand, network design and optimization for AI applications addresses a complementary topic, namely the support of AI-based systems through novel networking techniques, including new architectures, as well as performance models for IoT systems. IoT has paved the way to a plethora of new application domains, at the same time posing several challenges as a multitude of devices, protocols, communication channels, architectures, and middleware exist. Big data generated by these devices calls for advanced learning and data mining techniques to effectively understand, learn, and reason with this volume of information, such as cognitive technologies. Cognitive technologies play a major role in developing successful cognitive systems which mimic "cognitive" functions associated with human intelligence, such as "learning" and "problem solving." Thus, there is a continuing demand for recent research in these two linked fields. The *Handbook of Research on Innovations and Applications of AI, IoT, and Cognitive Technologies* discusses the latest innovations and applications of AI, IoT, and cognitive-based smart systems. The chapters cover the intersection of these three fields in emerging and developed economies in terms of their respective development situation, public policies, technologies and intellectual capital, innovation systems, competition and strategies, marketing and growth capability, and governance and relegation models. These applications span areas such as healthcare, security and privacy, industrial systems, multidisciplinary sciences, and more. This book is ideal for technologists, IT specialists, policymakers, government officials, academics, students, and practitioners interested in the experiences of innovations and applications of AI, IoT, and cognitive technologies.

Recent Trends in Image Processing and Pattern Recognition - K. C. Santosh 2019-07-15

This three-book set constitutes the refereed proceedings of the Second International Conference on Recent Trends in Image Processing and Pattern Recognition (RTIP2R) 2018, held in Solapur, India, in December 2018. The 173 revised full papers presented were carefully reviewed and selected from 374 submissions. The papers are organized in topical sections in the tree volumes. Part I: computer vision and pattern recognition; machine learning and applications; and image processing. Part II: healthcare and medical imaging; biometrics and applications. Part III: document image analysis; image analysis in agriculture; and data mining, information retrieval and applications.

[Proceedings of International Conference on Information and Communication](#)

Technology for Development - Mohiuddin Ahmad 2023-01-25

This book gathers outstanding research papers presented at the International Conference on Information and Communication Technology for Development (ICICTD 2022), held on July 29–30, 2022, at the Institute of Information and Communication Technology (IICT), Khulna University of Engineering & Technology (KUET), Khulna, Bangladesh. The topics covered are ICT in health care, ICT in e-commerce, e-governance, collective intelligence, soft computing, optimization, cloud computing, machine learning, intelligent software, robotics, data science, data security, big data analytics and IoT, information systems, computer network, algorithms, and natural language processing.

Networking Communication and Data Knowledge Engineering - Gregorio Martinez Perez 2017-11-02

Data science, data engineering and knowledge engineering requires networking and communication as a backbone and have wide scope of implementation in engineering sciences. Keeping this ideology in preference, this book includes the insights that reflect the advances in these fields from upcoming researchers and leading academicians across the globe. It contains high-quality peer-reviewed papers of 'International Conference on Recent Advancement in Computer, Communication and Computational Sciences (ICRACCCS 2016)', held at Janardan Rai Nagar Rajasthan Vidyapeeth University, Udaipur, India, during 25–26 November 2016. The volume covers variety of topics such as Advanced Communication Networks, Artificial Intelligence and Evolutionary Algorithms, Advanced Software Engineering and Cloud Computing, Image Processing and Computer Vision, and Security. The book will help the perspective readers from computer industry and academia to derive the advances of next generation communication and computational technology and shape them into real life applications.

Brain Tumor Detection Based on Convolutional Neural Network with Neutrosophic Expert Maximum Fuzzy Sure Entropy - Fatih ÖZYURT

Brain tumor classification is a challenging task in the field of medical image processing. The present study proposes a hybrid method using Neutrosophy and Convolutional Neural Network (NS-CNN). It aims to classify tumor region areas that are segmented from brain images as benign and malignant. In the first stage, MRI images were segmented using the neutrosophic set – expert maximum fuzzy-sure entropy (NS-EMFSE) approach.

Proceedings of International Conference on Scientific and Natural Computing - Dipti Singh 2021-05-31

This book includes high-quality papers presented at International Conference on Scientific and Natural Computing (SNC 2021), organized by Department of Applied Mathematics, Gautam Buddha University, Greater Noida in collaboration with IIT Roorkee and Technical University of Ostrava (VSB-TU) and technically sponsored by Soft Computing Research Society of India, held online during 5 – 6 February 2021. The topics include self-organizing migrating algorithm, genetic algorithms, swarm intelligence based techniques, evolutionary computing, fuzzy computing, probabilistic computing, genetic programming, particle swarm optimization, neuro computing, hybrid methods, deep learning, including convolutional neural networks, generative adversarial networks and auto-encoders, bio-inspired systems, data mining, data visualization, intelligent agents, engineering design optimization, multi-objective optimization, fault diagnosis, decision support, robotics, signal or image processing, system identification and modelling, systems integration, time series prediction, virtual reality, vision or pattern recognition, intelligent information retrieval, motion control and power electronics, Internet

of Everything (IoE), control systems, and supply chain management.

Approaches and Applications of Deep Learning in Virtual Medical Care - Zaman, Noor 2022-02-25

The recent advancements in the machine learning paradigm have various applications, specifically in the field of medical data analysis. Research has proven the high accuracy of deep learning algorithms, and they have become a standard choice for analyzing medical data, especially medical images, video, and electronic health records. Deep learning methods applied to electronic health records are contributing to understanding the evolution of chronic diseases and predicting the risk of developing those diseases. Approaches and Applications of Deep Learning in Virtual Medical Care considers the applications of deep learning in virtual medical care and delves into complex deep learning algorithms, calibrates models, and improves the predictions of the trained model on medical imaging. Covering topics such as big data and medical sensors, this critical reference source is ideal for researchers, academicians, practitioners, industry professionals, hospital workers, scholars, instructors, and students.

Biomedical Image Processing - Thomas Martin Deserno 2011-03-01

In modern medicine, imaging is the most effective tool for diagnostics, treatment planning and therapy. Almost all modalities have went to directly digital acquisition techniques and processing of this image data have become an important option for health care in future. This book is written by a team of internationally recognized experts from all over the world. It provides a brief but complete overview on medical image processing and analysis highlighting recent advances that have been made in academics. Color figures are used extensively to illustrate the methods and help the reader to understand the complex topics.

Applications of Artificial Intelligence in Medical Imaging - Abdulhamit Subasi 2022-11-28

Applications of Artificial Intelligence in Medical Imaging provides the description of various biomedical image analysis in disease detection using AI that can be used to incorporate knowledge obtained from different medical imaging devices such as CT, X-ray, PET and ultrasound. The book discusses the use of AI for detection of several cancer types, including brain tumor, breast, pancreatic, rectal, lung colon, and skin. In addition, it explains how AI and deep learning techniques can be used to diagnose Alzheimer's, Parkinson's, COVID-19 and mental conditions. This is a valuable resource for clinicians, researchers and healthcare professionals who are interested in learning more about AI and its impact in medical/biomedical image analysis. Discusses new deep learning algorithms for image analysis and how they are used for medical images Provides several examples for each imaging technique, along with their application areas so that readers can rely on them as a clinical decision support system Describes how new AI tools may contribute significantly to the successful enhancement of a single patient's clinical knowledge to improve treatment outcomes

Proceedings of the 2nd International Conference on Computational and Bio Engineering - S. Jyothi 2021-09-27

This book presents the peer-reviewed proceedings of the 2nd International Conference on Computational and Bioengineering (CBE 2020) jointly organized in virtual mode by the Department of Computer Science and the Department of BioScience & Sericulture, Sri Padmavati Mahila Visvavidyalayam (Women's University), Tirupati, Andhra Pradesh, India, during 4–5 December 2020. The book includes the latest research on advanced computational methodologies such as artificial intelligence, data mining and data warehousing, cloud computing,

computational intelligence, soft computing, image processing, Internet of things, cognitive computing, wireless networks, social networks, big data analytics, machine learning, network security, computer networks and communications, bioinformatics, biocomputing/biometrics, computational biology, biomaterials, bioengineering, and medical and biomedical informatics.

Computational Vision and Bio Inspired Computing - D. Jude Hemanth 2018-02-19
This is the proceedings of the International Conference On Computational Vision and Bio Inspired Computing (ICCVBIC 2017) held at RVS Technical Campus, September 21-22, 2017. It includes papers on state of the art innovations in bio-inspired computing applications, where new algorithms and results are produced and described. Additionally, this volume addresses evolutionary computation paradigms, artificial neural networks and biocomputing. It focuses mainly on research based on visual interference on the basis of biological images. Computation of data sources also plays a major role in routine day-to-day life for the purposes such as video transmission, wireless applications, fingerprint recognition and processing, big data intelligence, automation, human centric recognition systems. With the advantage of processing bio-inspired computations, a variety of computational paradigms can be processed. Finally, this book also treats the formation of neural networks by enabling local connectivity within it with the aid of vision sensing elements. The work also provides potential directions for future research.

Image-Processing Techniques for Tumor Detection - Robin N. Strickland 2002-04-24
"Provides a current review of computer processing algorithms for the identification of lesions, abnormal masses, cancer, and disease in medical images. Presents useful examples from numerous imaging modalities for increased recognition of anomalies in MRI, CT, SPECT and digital/film X-Ray."

Advances in Computing and Information Technology - Natarajan Meghanathan 2012-08-11
The international conference on Advances in Computing and Information technology (ACITY 2012) provides an excellent international forum for both academics and professionals for sharing knowledge and results in theory, methodology and applications of Computer Science and Information Technology. The Second International Conference on Advances in Computing and Information technology (ACITY 2012), held in Chennai, India, during July 13-15, 2012, covered a number of topics in all major fields of Computer Science and Information Technology including: networking and communications, network security and applications, web and internet computing, ubiquitous computing, algorithms, bioinformatics, digital image processing and pattern recognition, artificial intelligence, soft computing and applications. Upon a strength review process, a number of high-quality, presenting not only innovative ideas but also a founded evaluation and a strong argumentation of the same, were selected and collected in the present proceedings, that is composed of three different volumes.

Communication and Computing Systems - B.M.K. Prasad 2017-02-15
This book is a collection of accepted papers that were presented at the International Conference on Communication and Computing Systems (ICCCS-2016), Dronacharya College of Engineering, Gurgaon, September 9–11, 2016. The purpose of the conference was to provide a platform for interaction between scientists from industry, academia and other areas of society to discuss the current advancements in the field of communication and computing systems. The papers submitted to the proceedings were peer-reviewed by 2-3 expert referees. This volume contains 5 main subject areas: 1. Signal and Image Processing, 2. Communication & Computer

Networks, 3. Soft Computing, Intelligent System, Machine Vision and Artificial Neural Network, 4. VLSI & Embedded System, 5. Software Engineering and Emerging Technologies.

Proceedings of International Conference on Data Science and Applications - Mukesh Saraswat 2021-11-22

This book gathers outstanding papers presented at the International Conference on Data Science and Applications (ICDSA 2021), organized by Soft Computing Research Society (SCRS) and Jadavpur University, Kolkata, India, from April 10 to 11, 2021. It covers theoretical and empirical developments in various areas of big data analytics, big data technologies, decision tree learning, wireless communication, wireless sensor networking, bioinformatics and systems, artificial neural networks, deep learning, genetic algorithms, data mining, fuzzy logic, optimization algorithms, image processing, computational intelligence in civil engineering, and creative computing.

Proceeding of the International Conference on Computer Networks, Big Data and IoT (ICCBi - 2018) - A.Pasumpon Pandian 2019-07-31

This book presents the proceedings of the International Conference on Computer Networks, Big Data and IoT (ICCBi-2018), held on December 19–20, 2018 in Madurai, India. In recent years, advances in information and communication technologies [ICT] have collectively aimed to streamline the evolution of internet applications. In this context, increasing the ubiquity of emerging internet applications with an enhanced capability to communicate in a distributed environment has become a major need for existing networking models and applications. To achieve this, Internet of Things [IoT] models have been developed to facilitate a smart interconnection and information exchange among modern objects – which plays an essential role in every aspect of our lives. Due to their pervasive nature, computer networks and IoT can easily connect and engage effectively with their network users. This vast network continuously generates data from heterogeneous devices, creating a need to utilize big data, which provides new and unprecedented opportunities to process these huge volumes of data. This International Conference on Computer Networks, Big Data, and Internet of Things [ICCBi] brings together state-of-the-art research work, which briefly describes advanced IoT applications in the era of big data. As such, it offers valuable insights for researchers and scientists involved in developing next-generation, big-data-driven IoT applications to address the real-world challenges in building a smartly connected environment.

High-Resolution Neuroimaging - Ahmet Mesrur Halefoğlu 2018-03-14

Dr. Ahmet Mesrur Halefoğlu mostly deals with research fields in body imaging and neuroradiology with multidetector computed tomography and high-resolution magnetic resonance imaging. He has served as postdoctoral research fellow at Johns Hopkins Hospital. Currently, he is working as an associate professor of radiology in Istanbul, Turkey. He has more than 50 high-impact-factor publications and has written 3 book chapters. He is a member of Turkish Society of Radiology and European Society of Radiology. During the recent years, there have been major breakthroughs in MRI due to developments in scanner technology and pulse sequencing. These important achievements have led to remarkable improvements in neuroimaging and advanced techniques, including diffusion imaging, diffusion tensor imaging, perfusion imaging, magnetic resonance spectroscopy, and functional MRI. These advanced neuroimaging techniques have enabled us to achieve invaluable insights into tissue microstructure, microvasculature, metabolism, and brain connectivity.

Brain Tumor MRI Image Segmentation Using Deep Learning Techniques - Jyotismita Chaki 2021-12-13

Brain Tumor MRI Image Segmentation Using Deep Learning Techniques offers a description of deep learning approaches used for the segmentation of brain tumors. The book demonstrates core concepts of deep learning algorithms by using diagrams, data tables and examples to illustrate brain tumor segmentation. After introducing basic concepts of deep learning-based brain tumor segmentation, sections cover techniques for modeling, segmentation and properties. A focus is placed on the application of different types of convolutional neural networks, like single path, multi path, fully convolutional network, cascade convolutional neural networks, Long Short-Term Memory - Recurrent Neural Network and Gated Recurrent Units, and more. The book also highlights how the use of deep neural networks can address new questions and protocols, as well as improve upon existing challenges in brain tumor segmentation. Provides readers with an understanding of deep learning-based approaches in the field of brain tumor segmentation, including preprocessing techniques Integrates recent advancements in the field, including the transformation of low-resolution brain tumor images into super-resolution images using deep learning-based methods, single path Convolutional Neural Network based brain tumor segmentation, and much more Includes coverage of Long Short-Term Memory (LSTM) based Recurrent Neural Network (RNN), Gated Recurrent Units (GRU) based Recurrent Neural Network (RNN), Generative Adversarial Networks (GAN), Auto Encoder based brain tumor segmentation, and Ensemble deep learning Model based brain tumor segmentation Covers research Issues and the future of deep learning-based brain tumor segmentation

Emerging Research in Computing, Information, Communication and Applications - N. R. Shetty 2019-05-02

This book presents selected papers from the International Conference on Emerging Research in Computing, Information, Communication and Applications, ERCICA 2018. The conference provided an interdisciplinary forum for researchers, professional engineers and scientists, educators, and technologists to discuss, debate and promote research and technology in the emerging areas of computing, information, communication and their applications. The book discusses these research areas, providing a valuable resource for researchers and practicing engineers alike.

Handbook of Research on Information Security in Biomedical Signal Processing - Pradhan, Chittaranjan 2018-04-13

Recent advancements and innovations in medical image and data processing have led to a need for robust and secure mechanisms to transfer images and signals over the internet and maintain copyright protection. The Handbook of Research on Information Security in Biomedical Signal Processing provides emerging research on security in biomedical data as well as techniques for accurate reading and further processing. While highlighting topics such as image processing, secure access, and watermarking, this publication explores advanced models and algorithms in information security in the modern healthcare system. This publication is a vital resource for academicians, medical professionals, technology developers, researchers, students, and practitioners seeking current research on intelligent techniques in medical data security.

Advances in Electronics, Communication and Computing - Akhtar Kalam 2017-10-27

This book is a compilation of research work in the interdisciplinary areas of electronics, communication, and computing. This book is specifically targeted at students, research scholars and academicians. The book covers the different approaches and techniques for specific applications, such as particle-swarm

optimization, Otsu's function and harmony search optimization algorithm, triple gate silicon on insulator (SOI)MOSFET, micro-Raman and Fourier Transform Infrared Spectroscopy (FTIR) analysis, high-k dielectric gate oxide, spectrum sensing in cognitive radio, microstrip antenna, Ground-penetrating radar (GPR) with conducting surfaces, and digital image forgery detection. The contents of the book will be useful to academic and professional researchers alike.

Human-Computer Interaction: Concepts, Methodologies, Tools, and Applications - Management Association, Information Resources 2015-10-02

As modern technologies continue to develop and evolve, the ability of users to interface with new systems becomes a paramount concern. Research into new ways for humans to make use of advanced computers and other such technologies is necessary to fully realize the potential of 21st century tools. Human-Computer Interaction: Concepts, Methodologies, Tools, and Applications gathers research on user interfaces for advanced technologies and how these interfaces can facilitate new developments in the fields of robotics, assistive technologies, and computational intelligence. This four-volume reference contains cutting-edge research for computer scientists; faculty and students of robotics, digital science, and networked communications; and clinicians invested in assistive technologies. This seminal reference work includes chapters on topics pertaining to system usability, interactive design, mobile interfaces, virtual worlds, and more.

Hybrid Image Processing Methods for Medical Image Examination - Venkatesan Rajinikanth 2021-01-29

In view of better results expected from examination of medical datasets (images) with hybrid (integration of thresholding and segmentation) image processing methods, this work focuses on implementation of possible hybrid image examination techniques for medical images. It describes various image thresholding and segmentation methods which are essential for the development of such a hybrid processing tool. Further, this book presents the essential details, such as test image preparation, implementation of a chosen thresholding operation, evaluation of threshold image, and implementation of segmentation procedure and its evaluation, supported by pertinent case studies. Aimed at researchers/graduate students in the medical image processing domain, image processing, and computer engineering, this book: Provides broad background on various image thresholding and segmentation techniques Discusses information on various assessment metrics and the confusion matrix Proposes integration of the thresholding technique with the bio-inspired algorithms Explores case studies including MRI, CT, dermoscopy, and ultrasound images Includes separate chapters on machine learning and deep learning for medical image processing

High-Performance Medical Image Processing - Sanjay Saxena 2022-07-07

The processing of medical images in a reasonable timeframe and with high definition is very challenging. This volume helps to meet that challenge by presenting a thorough overview of medical imaging modalities, its processing, high-performance computing, and the need to embed parallelism in medical image processing techniques to achieve efficient and fast results. With contributions from researchers from prestigious laboratories and educational institutions, High-Performance Medical Image Processing provides important information on medical image processing techniques, parallel computing techniques, and embedding parallelism in different image processing techniques. A comprehensive review of parallel algorithms in medical image processing problems is a key feature of this book. The volume presents the relevant theoretical frameworks and the latest empirical research findings in the area and provides detailed descriptions about

the diverse high-performance techniques. Topics discussed include parallel computing, multicore architectures and their applications in image processing, machine learning applications, conventional and advanced magnetic resonance imaging methods, hyperspectral image processing, algorithms for segmenting 2D slices for 3D viewing, and more. Case studies, such as on the detection of cancer tumors, expound on the information presented. Key features: Provides descriptions of different medical imaging modalities and their applications Discusses the basics and advanced aspects of parallel computing with different multicore architectures Expounds on the need for embedding data and task parallelism in different medical image processing techniques Presents helpful examples and case studies of the discussed methods This book will be valuable for professionals, researchers, and students working in the field of healthcare engineering, medical imaging technology, applications in machine and deep learning, and more. It is also appropriate for courses in computer engineering, biomedical engineering and electrical engineering based on artificial intelligence, parallel computing, high performance computing, and machine learning and its applications in medical imaging.

Innovations in Electronics and Communication Engineering - H. S. Saini 2018-08-28
The book is a collection of best selected research papers presented at 6th International Conference on Innovations in Electronics and Communication Engineering at Guru Nanak Institutions Hyderabad, India. The book presents works from researchers, technocrats and experts about latest technologies in electronic and communication engineering. The book covers various streams of communication engineering like signal processing, VLSI design, embedded systems, wireless communications, and electronics and communications in general. The authors have discussed the latest cutting edge technology and the volume will serve as a reference for young researchers.

Intelligent Information and Database Systems - Ngoc Thanh Nguyen 2020-03-03
The two-volume set LNAI 12033 and 11034 constitutes the refereed proceedings of the 12th Asian Conference on Intelligent Information and Database Systems, ACIIDS 2020, held in Phuket, Thailand, in March 2020. The total of 105 full papers accepted for publication in these proceedings were carefully reviewed and selected from 285 submissions. The papers of the first volume are organized in the following topical sections: Knowledge Engineering and Semantic Web, Natural Language Processing, Decision Support and Control Systems, Computer Vision Techniques, Machine Learning and Data Mining, Deep Learning Models, Advanced Data Mining Techniques and Applications, Multiple Model Approach to Machine Learning. The papers of the second volume are divided into these topical sections: Application of Intelligent Methods to Constrained Problems, Automated Reasoning with Applications in Intelligent Systems, Current Trends in Artificial Intelligence, Optimization, Learning, and Decision-Making in Bioinformatics and Bioengineering, Computer Vision and Intelligent Systems, Data Modelling and Processing for Industry 4.0, Intelligent Applications of Internet of Things and Data Analysis Technologies, Intelligent and Contextual Systems, Intelligent Systems and Algorithms in Information Sciences, Intelligent Supply Chains and e-Commerce, Privacy, Security and Trust in Artificial Intelligence, Interactive Analysis of Image, Video and Motion Data in Life Sciences.

ICDSMLA 2020 - Amit Kumar 2021-11-08
This book gathers selected high-impact articles from the 2nd International Conference on Data Science, Machine Learning & Applications 2020. It highlights the latest developments in the areas of artificial intelligence, machine learning,

soft computing, human-computer interaction and various data science and machine learning applications. It brings together scientists and researchers from different universities and industries around the world to showcase a broad range of perspectives, practices and technical expertise.

Two Day International Conference on Data Science and Information Ecosystem'21 - Dr.M.Thangaraj

Advances in Computerized Analysis in Clinical and Medical Imaging - J Dinesh Peter 2019-10-28

Advances in Computerized Analysis in Clinical and Medical Imaging book is devoted for spreading of knowledge through the publication of scholarly research, primarily in the fields of clinical & medical imaging. The types of chapters consented include those that cover the development and implementation of algorithms and strategies based on the use of geometrical, statistical, physical, functional to solve the following types of problems, using medical image datasets: visualization, feature extraction, segmentation, image-guided surgery, representation of pictorial data, statistical shape analysis, computational physiology and telemedicine with medical images. This book highlights annotations for all the medical and clinical imaging researchers' a fundamental advances of clinical and medical image analysis techniques. This book will be a good source for all the medical imaging and clinical research professionals, outstanding scientists, and educators from all around the world for network of knowledge sharing. This book will comprise high quality disseminations of new ideas, technology focus, research results and discussions on the evolution of Clinical and Medical image analysis techniques for the benefit of both scientific and industrial developments. Features: Research aspects in clinical and medical image processing Human Computer Interaction and interface in imaging diagnostics Intelligent Imaging Systems for effective analysis using machine learning algorithms Clinical and Scientific Evaluation of Imaging Studies Computer-aided disease detection and diagnosis Clinical evaluations of new technologies Mobility and assistive devices for challenged and elderly people This book serves as a reference book for researchers and doctoral students in the clinical and medical imaging domain including radiologists. Industries that manufacture imaging modality systems and develop optical systems would be especially interested in the challenges and solutions provided in the book. Professionals and practitioners in the medical and clinical imaging may be benefited directly from authors' experiences.

Blockchain Applications for Healthcare Informatics - Sudeep Tanwar 2022-05-20
Blockchain Applications for Healthcare Informatics: Beyond 5G offers a comprehensive survey of 5G-enabled technology in healthcare applications. This book investigates the latest research in blockchain technologies and seeks to answer some of the practical and methodological questions surrounding privacy and security in healthcare. It explores the most promising aspects of 5G for healthcare industries, including how hospitals and healthcare systems can do better. Chapters investigate the detailed framework needed to maintain security and privacy in 5G healthcare services using blockchain technologies, along with case studies that look at various performance evaluation metrics, such as privacy preservation, scalability and healthcare legislation. Introduces the basic architecture and taxonomy of 5G-enabled blockchain technology Analyzes issues and challenges surrounding 5G-enabled blockchain-based systems in healthcare Investigates blockchain-based healthcare applications such as telemedicine,

telesurgery, remote patient monitoring, networking of the Internet of Medical Things, and augmented and virtual reality tools for training in complex medical scenarios. Includes case studies and real-world examples in each chapter to demonstrate the adoption of 5G-enabled blockchain technology across various healthcare domains

Simple Statistical Methods for Software Engineering - C. Ravindranath Pandian 2015-05-21

Although there are countless books on statistics, few are dedicated to the application of statistical methods to software engineering. *Simple Statistical Methods for Software Engineering: Data and Patterns* fills that void. Instead of delving into overly complex statistics, the book details simpler solutions that are just as effective and connect with the intuition of problem solvers. Sharing valuable insights into software engineering problems and solutions, the book not only explains the required statistical methods, but also provides many examples, review questions, and case studies that provide the understanding required to apply those methods to real-world problems. After reading this book, practitioners will possess the confidence and understanding to solve day-to-day problems in quality, measurement, performance, and benchmarking. By following the examples and case studies, students will be better prepared able to achieve seamless transition from academic study to industry practices. Includes boxed stories, case studies, and illustrations that demonstrate the nuances behind proper application. Supplies historical anecdotes and traces statistical methods to inventors and gurus. Applies basic statistical laws in their simplest forms to resolve engineering problems. Provides simple techniques for addressing the issues software engineers face. The book starts off by reviewing the essential facts about data. Next, it supplies a detailed review and summary of metrics, including development, maintenance, test, and agile metrics. The third section covers the fundamental laws of probability and statistics and the final section presents special data patterns in the form of tailed mathematical distributions. In addition to selecting simpler and more flexible tools, the authors have also simplified several standard techniques to provide you with the set of intellectual tools all software engineers and managers require.

Proceedings of 2nd International Conference on Communication, Computing and Networking - C. Rama Krishna 2018-09-07

The book provides insights from the 2nd International Conference on Communication, Computing and Networking organized by the Department of Computer Science and Engineering, National Institute of Technical Teachers Training and Research, Chandigarh, India on March 29–30, 2018. The book includes contributions in which researchers, engineers, and academicians as well as industrial professionals from around the globe presented their research findings and development activities in the field of Computing Technologies, Wireless Networks, Information Security, Image Processing and Data Science. The book provides opportunities for the readers to explore the literature, identify gaps in the existing works and propose new ideas for research.

FUNDAMENTALS OF MEDICAL IMAGE PROCESSING USING MATLAB - MAJUMDER, DWIJESH KUMAR DUTTA 2022-07-01

The book is designed as per the present requirement of subject. It acquaints the students/readers with fundamental image processing concepts and methodologies for better understanding and more meaningful retrieval of information of the internal structure of human organs. In the book, various concepts of image processing are discussed for different modalities of medical imaging, such as CT, MRI, PET, and

SPECT. The book covers various important topics such as Programming in MATLAB, Biomedical Imaging, Artificial Neural Network, and Image Processing. The chapters on image enhancement, segmentation, shape analysis, registration, visualization, and retrieval make this book very comprehensive and useful for the students/readers. The exercises and examples given in each chapter will be very helpful to better understand the topics and to do quick revision. KEY FEATURES 1. Artificial Neural Network in image processing is described briefly. 2. Different modalities of image processing are discussed in the book. 3. Shape theoretic approach of image processing is also discussed. 4. Chapters on Programming in MATLAB, Biomedical Imaging, ANN, Medical Image Modalities, Image Enhancement, Segmentation, Shape Analysis, Registration, Visualization, and Retrieval make the book very comprehensive. TARGET AUDIENCE 1. B.Tech/M.Tech CSE, IT, Engineering Physics, and Mathematics and Computing 2. MCA

ICTMI 2017 - Balázs Gulyás 2019-02-07

This book highlights the latest research presented at the International Conference on Translational Medicine and Imaging (ICTMI) 2017. This event brought together the world's leading scientists, engineers and clinicians from a wide range of disciplines in the field of medical imaging. Bioimaging has continued to evolve across a wide spectrum of applications from diagnostics and personalized therapy to the mechanistic understanding of biological processes, and as a result there is ever-increasing demand for more robust methods and their integration with clinical and molecular data. This book presents a number of these methods.

Fuzzy Expert Systems for Disease Diagnosis - Kumar, A.V. Senthil 2014-11-30

The development of fuzzy expert systems has provided new opportunities for problem solving amidst uncertainties. The medical field, in particular, has benefitted tremendously from advancing fuzzy system technologies. *Fuzzy Expert Systems for Disease Diagnosis* highlights the latest research and developments in fuzzy rule-based methods used in the detection of medical complications and illness. Offering emerging solutions and practical applications, this timely publication is designed for use by researchers, academicians, and students, as well as practitioners in the medical field.

Proceedings of Integrated Intelligence Enable Networks and Computing - Krishan Kant Singh Mer 2021-04-23

This book presents best selected research papers presented at the First International Conference on Integrated Intelligence Enable Networks and Computing (IIENC 2020), held from May 25 to May 27, 2020, at the Institute of Technology, Gopeshwar, India (Government Institute of Uttarakhand Government and affiliated to Uttarakhand Technical University). The book includes papers in the field of intelligent computing. The book covers the areas of machine learning and robotics, signal processing and Internet of things, big data and renewable energy sources.

Computer-Aided Detection and Diagnosis in Medical Imaging - Qiang Li 2015-03-17

Improve the Accurate Detection and Diagnosis of Cancer and Other Diseases Despite the expansion of the CAD field in recent decades, there is currently no single book dedicated to the development and use of CAD systems. Filling this need, *Computer-Aided Detection and Diagnosis in Medical Imaging* covers the major technical advances and methodologies shaping the development and clinical utility of CAD systems in breast imaging, chest imaging, abdominal imaging, and other emerging applications. After a historical overview of CAD, the book is divided into four sections. The first section presents CAD technologies in breast imaging, which is the most advanced area of CAD application. The second section discusses CAD technologies in chest and abdominal imaging. The third section explores

emerging CAD technologies in a wide range of imaging modalities designed to address a variety of diseases. The final section describes the current use of CAD systems in clinical practice as well as how CAD will play an important role in quantitative image biomarkers and imaging genomics research. This book brings together existing and emerging CAD approaches at a level understandable to

students, CAD system developers, basic scientists, and physician scientists. Newcomers to CAD research will learn about fundamental aspects in the process of CAD system development. Developers of CAD systems will gain insight on designing new or improved CAD systems. Experienced researchers will get up-to-date information on the latest CAD technologies.