

Texture Feature Extraction Matlab Code

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Computer Analysis of Images and Patterns - Ainhoa Berciano 2011-08-19

The two volume set LNCS 6854/6855 constitutes the refereed proceedings of the International Conference on Computer Analysis of Images and Patterns, CAIP 2011, which took place in Seville, Spain, August 29-31, 2011. The 138 papers presented together with 2 invited talks were carefully reviewed and selected from 286 submissions. The papers are organized in topical section on: motion analysis, image and shape models, segmentation and grouping, shape recovery, kernel methods, medical imaging, structural pattern recognition, Biometrics, image and video processing, calibration; and tracking and stereo vision.

Soft Computing Applications - Valentina Emilia Balas 2015-11-02
These volumes constitute the Proceedings of the 6th International Workshop on Soft Computing Applications, or SOFA 2014, held on 24-26 July 2014 in Timisoara, Romania. This edition was organized by the University of Belgrade, Serbia in conjunction with Romanian Society of Control Engineering and Technical Informatics (SRAIT) - Arad Section, The General Association of Engineers in Romania - Arad Section, Institute of Computer Science, Iasi Branch of the Romanian Academy and IEEE Romanian Section. The Soft Computing concept was introduced by Lotfi Zadeh in 1991 and serves to highlight the emergence of computing methodologies in which the accent is on exploiting the tolerance for imprecision and

uncertainty to achieve tractability, robustness and low solution cost. Soft computing facilitates the use of fuzzy logic, neurocomputing, evolutionary computing and probabilistic computing in combination, leading to the concept of hybrid intelligent systems. The combination of such intelligent systems tools and a large number of applications introduce a need for a synergy of scientific and technological disciplines in order to show the great potential of Soft Computing in all domains. The conference papers included in these proceedings, published post conference, were grouped into the following area of research: · Image, Text and Signal Processing Intelligent Transportation Modeling and Applications Biomedical Applications Neural Network and Applications Knowledge-Based Technologies for Web Applications, Cloud Computing, Security, Algorithms and Computer Networks Knowledge-Based Technologies Soft Computing Techniques for Time Series Analysis Soft Computing and Fuzzy Logic in Biometrics Fuzzy Applications Theory and Fuzzy Control Business Process Management Methods and Applications in Electrical Engineering The volumes provide useful information to professors, researchers and graduated students in area of soft computing techniques and applications, as they report new research work on challenging issues.
Intelligent Systems and Applications - Kohei Arai 2021-08-06

This book presents Proceedings of the 2021 Intelligent Systems Conference which is a remarkable collection of chapters covering a wider range of topics in areas of intelligent systems and artificial intelligence and their applications to the real world. The conference attracted a total of 496 submissions from many academic pioneering researchers, scientists, industrial engineers, and students from all around the world. These submissions underwent a double-blind peer-review process. Of the total submissions, 180 submissions have been selected to be included in these proceedings. As we witness exponential growth of computational intelligence in several directions and use of intelligent systems in everyday applications, this book is an ideal resource for reporting latest innovations and future of AI. The chapters include theory and application on all aspects of artificial intelligence, from classical to intelligent scope. We hope that readers find the book interesting and valuable; it provides the state-of-the-art intelligent methods and techniques for solving real-world problems along with a vision of the future research.

Advances in Biometrics - Seong-Whan Lee 2007-08-14

This book constitutes the refereed proceedings of the International Conference on Biometrics, ICB 2007, held in Seoul, Korea, August 2007. Biometric criteria covered by the papers are assigned to face, fingerprint, iris, speech and signature, biometric fusion and performance evaluation, gait, keystrokes, and others. In addition, the volume also announces the results of the Face Authentication Competition, FAC 2006.

Outcomes of stroke: Prediction and improvement - Heling Chu 2023-08-16

Radiomics and Radiogenomics - Ruijiang Li 2019-07-09

Radiomics and Radiogenomics: Technical Basis and Clinical Applications provides a first summary of the overlapping fields of radiomics and radiogenomics, showcasing how they are being used to

evaluate disease characteristics and correlate with treatment response and patient prognosis. It explains the fundamental principles, technical bases, and clinical applications with a focus on oncology. The book's expert authors present computational approaches for extracting imaging features that help to detect and characterize disease tissues for improving diagnosis, prognosis, and evaluation of therapy response. This book is intended for audiences including imaging scientists, medical physicists, as well as medical professionals and specialists such as diagnostic radiologists, radiation oncologists, and medical oncologists. Features Provides a first complete overview of the technical underpinnings and clinical applications of radiomics and radiogenomics Shows how they are improving diagnostic and prognostic decisions with greater efficacy Discusses the image informatics, quantitative imaging, feature extraction, predictive modeling, software tools, and other key areas Covers applications in oncology and beyond, covering all major disease sites in separate chapters Includes an introduction to basic principles and discussion of emerging research directions with a roadmap to clinical translation

Despeckle Filtering for Ultrasound Imaging and Video - Christos P. Loizou 2015-04-01

It is well known that speckle is a multiplicative noise that degrades image and video quality and the visual expert's evaluation in ultrasound imaging and video. This necessitates the need for robust despeckling image and video techniques for both routine Advanced Image and Video Processing Using MATLAB - Shengrong Gong 2018-08-21

This book offers a comprehensive introduction to advanced methods for image and video analysis and processing. It covers deraining, dehazing, inpainting, fusion, watermarking and stitching. It describes techniques for face and lip recognition, facial expression recognition, lip reading in videos,

moving object tracking, dynamic scene classification, among others. The book combines the latest machine learning methods with computer vision applications, covering topics such as event recognition based on deep learning, dynamic scene classification based on topic model, person re-identification based on metric learning and behavior analysis. It also offers a systematic introduction to image evaluation criteria showing how to use them in different experimental contexts. The book offers an example-based practical guide to researchers, professionals and graduate students dealing with advanced problems in image analysis and computer vision.

Texture Analysis and Synthesis for Image Post-processing - Rajas A. Sambhare 2003

Feature Extraction & Image Processing - Mark Nixon 2008-01-08

Whilst other books cover a broad range of topics, Feature Extraction and Image Processing takes one of the prime targets of applied computer vision, feature extraction, and uses it to provide an essential guide to the implementation of image processing and computer vision techniques. Acting as both a source of reference and a student text, the book explains techniques and fundamentals in a clear and concise manner and helps readers to develop working techniques, with usable code provided throughout. The new edition is updated throughout in line with developments in the field, and is revised to focus on mathematical programming in Matlab. Essential reading for engineers and students working in this cutting edge field. Ideal module text and background reference for courses in image processing and computer vision.

Advances in Computer, Communication and Control - Utpal Biswas 2019-02-14

The book discusses the recent research trends in various sub-domains of computing, communication and control. It includes research papers presented at the First International Conference on Emerging Trends in Engineering and Science. Focusing on areas such as

optimization techniques, game theory, supply chain, green computing, 5g networks, Internet of Things, social networks, power electronics and robotics, it is a useful resource for academics and researchers alike.

Practical Image and Video Processing Using MATLAB - Oge Marques 2011-08-04
UP-TO-DATE, TECHNICALLY ACCURATE COVERAGE OF ESSENTIAL TOPICS IN IMAGE AND VIDEO PROCESSING This is the first book to combine image and video processing with a practical MATLAB®-oriented approach in order to demonstrate the most important image and video techniques and algorithms. Utilizing minimal math, the contents are presented in a clear, objective manner, emphasizing and encouraging experimentation. The book has been organized into two parts. Part I: Image Processing begins with an overview of the field, then introduces the fundamental concepts, notation, and terminology associated with image representation and basic image processing operations. Next, it discusses MATLAB® and its Image Processing Toolbox with the start of a series of chapters with hands-on activities and step-by-step tutorials. These chapters cover image acquisition and digitization; arithmetic, logic, and geometric operations; point-based, histogram-based, and neighborhood-based image enhancement techniques; the Fourier Transform and relevant frequency-domain image filtering techniques; image restoration; mathematical morphology; edge detection techniques; image segmentation; image compression and coding; and feature extraction and representation. Part II: Video Processing presents the main concepts and terminology associated with analog video signals and systems, as well as digital video formats and standards. It then describes the technically involved problem of standards conversion, discusses motion estimation and compensation techniques, shows how video sequences can be filtered, and concludes with an example of a solution to object detection and tracking in video sequences using MATLAB®. Extra features of this book include: More than 30 MATLAB®

tutorials, which consist of step-by-step guides to exploring image and video processing techniques using MATLAB® Chapters supported by figures, examples, illustrative problems, and exercises Useful websites and an extensive list of bibliographical references This accessible text is ideal for upper-level undergraduate and graduate students in digital image and video processing courses, as well as for engineers, researchers, software developers, practitioners, and anyone who wishes to learn about these increasingly popular topics on their own.

Biomedical Texture Analysis - Adrien Depeursinge 2017-08-25
Biomedical Texture Analysis: Fundamentals, Applications, Tools and Challenges describes the fundamentals and applications of biomedical texture analysis (BTA) for precision medicine. It defines what biomedical textures (BTs) are and why they require specific image analysis design approaches when compared to more classical computer vision applications. The fundamental properties of BTs are given to highlight key aspects of texture operator design, providing a foundation for biomedical engineers to build the next generation of biomedical texture operators. Examples of novel texture operators are described and their ability to characterize BTs are demonstrated in a variety of applications in radiology and digital histopathology. Recent open-source software frameworks which enable the extraction, exploration and analysis of 2D and 3D texture-based imaging biomarkers are also presented. This book provides a thorough background on texture analysis for graduate students and biomedical engineers from both industry and academia who have basic image processing knowledge. Medical doctors and biologists with no background in image processing will also find available methods and software tools for analyzing textures in medical images. Defines biomedical texture precisely and describe how it is different from general texture

information considered in computer vision Defines the general problem to translate 2D and 3D texture patterns from biomedical images to visually and biologically relevant measurements Describes, using intuitive concepts, how the most popular biomedical texture analysis approaches (e.g., gray-level matrices, fractals, wavelets, deep convolutional neural networks) work, what they have in common, and how they are different Identifies the strengths, weaknesses, and current challenges of existing methods including both handcrafted and learned representations, as well as deep learning. The goal is to establish foundations for building the next generation of biomedical texture operators Showcases applications where biomedical texture analysis has succeeded and failed Provides details on existing, freely available texture analysis software, helping experts in medicine or biology develop and test precise research hypothesis

Computer Analysis of Images and Patterns - Mario Vento 2019-08-23
The two volume set LNCS 11678 and 11679 constitutes the refereed proceedings of the 18th International Conference on Computer Analysis of Images and Patterns, CAIP 2019, held in Salerno, Italy, in September 2019. The 106 papers presented were carefully reviewed and selected from 176 submissions The papers are organized in the following topical sections: Intelligent Systems; Real-time and GPU Processing; Image Segmentation; Image and Texture Analysis; Machine Learning for Image and Pattern Analysis; Data Sets and Benchmarks; Structural and Computational Pattern Recognition; Posters.
Soft Computing - 2005

Content-Based Image Classification - Rik Das 2020-12-22
Content-Based Image Classification: Efficient Machine Learning Using Robust Feature Extraction Techniques is a comprehensive guide to research with invaluable image data. Social Science Research Network has revealed that 65% of people are visual

learners. Research data provided by Hyerle (2000) has clearly shown 90% of information in the human brain is visual. Thus, it is no wonder that visual information processing in the brain is 60,000 times faster than text-based information (3M Corporation, 2001). Recently, we have witnessed a significant surge in conversing with images due to the popularity of social networking platforms. The other reason for embracing usage of image data is the mass availability of high-resolution cellphone cameras. Wide usage of image data in diversified application areas including medical science, media, sports, remote sensing, and so on, has spurred the need for further research in optimizing archival, maintenance, and retrieval of appropriate image content to leverage data-driven decision-making. This book demonstrates several techniques of image processing to represent image data in a desired format for information identification. It discusses the application of machine learning and deep learning for identifying and categorizing appropriate image data helpful in designing automated decision support systems. The book offers comprehensive coverage of the most essential topics, including: Image feature extraction with novel handcrafted techniques (traditional feature extraction) Image feature extraction with automated techniques (representation learning with CNNs) Significance of fusion-based approaches in enhancing classification accuracy MATLAB® codes for implementing the techniques Use of the Open Access data mining tool WEKA for multiple tasks The book is intended for budding researchers, technocrats, engineering students, and machine learning/deep learning enthusiasts who are willing to start their computer vision journey with content-based image recognition. The readers will get a clear picture of the essentials for transforming the image data into valuable means for insight generation. Readers will learn coding techniques necessary to propose novel mechanisms and disruptive approaches. The WEKA guide

provided is beneficial for those uncomfortable coding for machine learning algorithms. The WEKA tool assists the learner in implementing machine learning algorithms with the click of a button. Thus, this book will be a stepping-stone for your machine learning journey. Please visit the author's website for any further guidance at <https://www.rikdas.com/>

Feature Extraction and Image Processing for Computer Vision - Mark Nixon 2012-12-18

Feature Extraction and Image Processing for Computer Vision is an essential guide to the implementation of image processing and computer vision techniques, with tutorial introductions and sample code in Matlab. Algorithms are presented and fully explained to enable complete understanding of the methods and techniques demonstrated. As one reviewer noted, "The main strength of the proposed book is the exemplar code of the algorithms." Fully updated with the latest developments in feature extraction, including expanded tutorials and new techniques, this new edition contains extensive new material on Haar wavelets, Viola-Jones, bilateral filtering, SURF, PCA-SIFT, moving object detection and tracking, development of symmetry operators, LBP texture analysis, Adaboost, and a new appendix on color models. Coverage of distance measures, feature detectors, wavelets, level sets and texture tutorials has been extended. Named a 2012 Notable Computer Book for Computing Methodologies by Computing Reviews Essential reading for engineers and students working in this cutting-edge field Ideal module text and background reference for courses in image processing and computer vision The only currently available text to concentrate on feature extraction with working implementation and worked through derivation

Fundamentals of Image Data Mining - Dengsheng Zhang 2019-05-13

This reader-friendly textbook presents a comprehensive review of the essentials of image data mining, and the latest cutting-edge

techniques used in the field. The coverage spans all aspects of image analysis and understanding, offering deep insights into areas of feature extraction, machine learning, and image retrieval. The theoretical coverage is supported by practical mathematical models and algorithms, utilizing data from real-world examples and experiments. Topics and features: describes the essential tools for image mining, covering Fourier transforms, Gabor filters, and contemporary wavelet transforms; reviews a varied range of state-of-the-art models, algorithms, and procedures for image mining; emphasizes how to deal with real image data for practical image mining; highlights how such features as color, texture, and shape can be mined or extracted from images for image representation; presents four powerful approaches for classifying image data, namely, Bayesian classification, Support Vector Machines, Neural Networks, and Decision Trees; discusses techniques for indexing, image ranking, and image presentation, along with image database visualization methods; provides self-test exercises with instructions or Matlab code, as well as review summaries at the end of each chapter. This easy-to-follow work illuminates how concepts from fundamental and advanced mathematics can be applied to solve a broad range of image data mining problems encountered by students and researchers of computer science. Students of mathematics and other scientific disciplines will also benefit from the applications and solutions described in the text, together with the hands-on exercises that enable the reader to gain first-hand experience of computing.

Despeckle Filtering for Ultrasound Imaging and Video, Volume I -

Christos P. Loizou 2022-05-31

It is well known that speckle is a multiplicative noise that degrades image and video quality and the visual expert's evaluation in ultrasound imaging and video. This necessitates the need for robust despeckling image and video techniques for both routine clinical

practice and tele-consultation. The goal for this book (book 1 of 2 books) is to introduce the problem of speckle occurring in ultrasound image and video as well as the theoretical background (equations), the algorithmic steps, and the MATLABM code for the following group of despeckle filters: linear filtering, nonlinear filtering, anisotropic diffusion filtering, and wavelet filtering. This book proposes a comparative evaluation framework of these despeckle filters based on texture analysis, image quality evaluation metrics, and visual evaluation by medical experts. Despeckle noise reduction through the application of these filters will improve the visual observation quality or it may be used as a pre-processing step for further automated analysis, such as image and video segmentation, and texture characterization in ultrasound cardiovascular imaging, as well as in bandwidth reduction in ultrasound video transmission for telemedicine applications. The aforementioned topics will be covered in detail in the companion book to this one. Furthermore, in order to facilitate further applications we have developed in MATLABM two different toolboxes that integrate image (IDF) and video (VDF) despeckle filtering, texture analysis, and image and video quality evaluation metrics. The code for these toolsets is open source and these are available to download complementary to the two books. Table of Contents: Preface / Acknowledgments / List of Symbols / List of Abbreviations / Introduction to Speckle Noise in Ultrasound Imaging and Video / Basics of Evaluation Methodology / Linear Despeckle Filtering / Nonlinear Despeckle Filtering / Diffusion Despeckle Filtering / Wavelet Despeckle Filtering / Evaluation of Despeckle Filtering / Summary and Future Directions / References / Authors' Biographies

Hybrid Intelligent Techniques for Pattern Analysis and Understanding -

Siddhartha Bhattacharyya 2017-10-30

Hybrid Intelligent Techniques for Pattern Analysis and Understanding

outlines the latest research on the development and application of synergistic approaches to pattern analysis in real-world scenarios. An invaluable resource for lecturers, researchers, and graduates students in computer science and engineering, this book covers a diverse range of hybrid intelligent techniques, including image segmentation, character recognition, human behavioral analysis, hyperspectral data processing, and medical image analysis.

Feature Extraction and Image Processing for Computer Vision - Mark Nixon 2019-11-17

Feature Extraction for Image Processing and Computer Vision is an essential guide to the implementation of image processing and computer vision techniques, with tutorial introductions and sample code in MATLAB and Python. Algorithms are presented and fully explained to enable complete understanding of the methods and techniques demonstrated. As one reviewer noted, "The main strength of the proposed book is the link between theory and exemplar code of the algorithms." Essential background theory is carefully explained. This text gives students and researchers in image processing and computer vision a complete introduction to classic and state-of-the-art methods in feature extraction together with practical guidance on their implementation. The only text to concentrate on feature extraction with working implementation and worked through mathematical derivations and algorithmic methods. A thorough overview of available feature extraction methods including essential background theory, shape methods, texture and deep learning. Up to date coverage of interest point detection, feature extraction and description and image representation (including frequency domain and colour). Good balance between providing a mathematical background and practical implementation. Detailed and explanatory of algorithms in MATLAB and Python.

Digital Image Processing and Analysis - Scott E Umbaugh 2017-11-30
Digital image processing and analysis

is a field that continues to experience rapid growth, with applications in many facets of our lives. Areas such as medicine, agriculture, manufacturing, transportation, communication systems, and space exploration are just a few of the application areas. This book takes an engineering approach to image processing and analysis, including more examples and images throughout the text than the previous edition. It provides more material for illustrating the concepts, along with new PowerPoint slides. The application development has been expanded and updated, and the related chapter provides step-by-step tutorial examples for this type of development. The new edition also includes supplementary exercises, as well as MATLAB-based exercises, to aid both the reader and student in development of their skills.

Innovations in Bio-Inspired Computing and Applications - Ajith Abraham 2019-05-21

This book highlights recent research on bio-inspired computing and its various innovative applications in Information and Communication Technologies. It presents 50 high-quality papers from the 9th International Conference on Innovations in Bio-Inspired Computing and Applications (IBICA 2018) and 7th World Congress on Information and Communication Technologies (WICT 2018), which was held at Toc H Institute of Science and Technology (TIST) on December 17-19, 2018. IBICA-WICT 2018 was a premier conference and brought together researchers, engineers and practitioners whose work involved bio-inspired computing, computational intelligence and their applications in information security, real-world contexts etc. Including contributions by authors from 22 countries, the book offers a valuable reference guide for all researchers, students and practitioners in the fields of Computer Science and Engineering. *Randomness and Elements of Decision Theory Applied to Signals* - Monica Borda 2021-12-10

This book offers an overview on the main modern important topics in

random variables, random processes, and decision theory for solving real-world problems. After an introduction to concepts of statistics and signals, the book introduces many essential applications to signal processing like denoising, texture classification, histogram equalization, deep learning, or feature extraction. The book uses MATLAB algorithms to demonstrate the implementation of the theory to real systems. This makes the contents of the book relevant to students and professionals who need a quick introduction but practical introduction how to deal with random signals and processes

Local Binary Patterns: New Variants and Applications - Sheryl Brahmam
2013-09-01

This book introduces Local Binary Patterns (LBP), arguably one of the most powerful texture descriptors, and LBP variants. This volume provides the latest reviews of the literature and a presentation of some of the best LBP variants by researchers at the forefront of textual analysis research and research on LBP descriptors and variants. The value of LBP variants is illustrated with reported experiments using many databases representing a diversity of computer vision applications in medicine, biometrics, and other areas. There is also a chapter that provides an excellent theoretical foundation for texture analysis and LBP in particular. A special section focuses on LBP and LBP variants in the area of face recognition, including thermal face recognition. This book will be of value to anyone already in the field as well as to those interested in learning more about this powerful family of texture descriptors.

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.

13th International Conference on Theory and Application of Fuzzy Systems and Soft Computing – ICAFS-2018 - Rafik A. Aliev
2018-12-28

This book presents the proceedings of the 13th International Conference on Application of Fuzzy Systems and Soft Computing (ICAFS 2018), held in Warsaw, Poland on August 27-28, 2018. It includes contributions from diverse areas of soft computing such as uncertain computation, Z-information processing, neuro-fuzzy approaches, evolutionary computing and others. The topics of the papers include theory of uncertainty computation; theory and application of soft computing; decision theory with imperfect information; neuro-fuzzy technology; image processing with soft computing; intelligent control; machine learning; fuzzy logic in data analytics and data mining; evolutionary computing; chaotic systems; soft computing in business, economics and finance; fuzzy logic and soft computing in the earth sciences; fuzzy logic and soft computing in engineering; soft computing in medicine, biomedical engineering and the pharmaceutical sciences; and probabilistic and statistical reasoning in the social and educational sciences. The book covers new ideas from theoretical and practical perspectives in economics, business, industry, education, medicine, the earth sciences and other fields. In addition to promoting the development and application of soft computing methods in various real-life fields, it offers a useful guide for academics, practitioners, and graduates in fuzzy

logic and soft computing fields.

Despeckle Filtering for Ultrasound Imaging and Video, Volume II - Christos P. Loizou 2022-06-01

In ultrasound imaging and video visual perception is hindered by speckle multiplicative noise that degrades the quality. Noise reduction is therefore essential for improving the visual observation quality or as a pre-processing step for further automated analysis, such as image/video segmentation, texture analysis and encoding in ultrasound imaging and video. The goal of the first book (book 1 of 2 books) was to introduce the problem of speckle in ultrasound image and video as well as the theoretical background, algorithmic steps, and the MatlabTM for the following group of despeckle filters: linear despeckle filtering, non-linear despeckle filtering, diffusion despeckle filtering, and wavelet despeckle filtering. The goal of this book (book 2 of 2 books) is to demonstrate the use of a comparative evaluation framework based on these despeckle filters (introduced on book 1) on cardiovascular ultrasound image and video processing and analysis. More specifically, the despeckle filtering evaluation framework is based on texture analysis, image quality evaluation metrics, and visual evaluation by experts. This framework is applied in cardiovascular ultrasound image/video processing on the tasks of segmentation and structural measurements, texture analysis for differentiating between two classes (i.e. normal vs disease) and for efficient encoding for mobile applications. It is shown that despeckle noise reduction improved segmentation and measurement (of tissue structure investigated), increased the texture feature distance between normal and abnormal tissue, improved image/video quality evaluation and perception and produced significantly lower bitrates in video encoding. Furthermore, in order to facilitate further applications we have developed in MATLABTM two different toolboxes that integrate image (IDF) and video (VDF) despeckle filtering, texture

analysis, and image and video quality evaluation metrics. The code for these toolsets is open source and these are available to download complementary to the two monographs.

Proceedings of the Third International Conference on Soft Computing for Problem Solving - Millie Pant 2014-07-08

The proceedings of SocProS 2013 serve as an academic bonanza for scientists and researchers working in the field of Soft Computing. This book contains theoretical as well as practical aspects of Soft Computing, an umbrella term for techniques like fuzzy logic, neural networks and evolutionary algorithms, swarm intelligence algorithms etc. This book will be beneficial for the young as well as experienced researchers dealing with complex and intricate real world problems for which finding a solution by traditional methods is very difficult. The different areas covered in the proceedings are: Image Processing, Cryptanalysis, Supply Chain Management, Newly Proposed Nature Inspired Algorithms, Optimization, Problems related to Medical and Health Care, Networking etc.

ICT Systems and Sustainability - Milan Tuba 2020-12-14

This book proposes new technologies and discusses future solutions for ICT design infrastructures, as reflected in high-quality papers presented at the 5th International Conference on ICT for Sustainable Development (ICT4SD 2020), held in Goa, India, on 23-24 July 2020. The conference provided a valuable forum for cutting-edge research discussions among pioneering researchers, scientists, industrial engineers, and students from all around the world. Bringing together experts from different countries, the book explores a range of central issues from an international perspective.

XXVI Brazilian Congress on Biomedical Engineering - Rodrigo Costa-Felix 2019-05-15

This volume presents the proceedings of the Brazilian Congress on Biomedical Engineering (CBEB 2018). The conference was organised by the Brazilian Society on Biomedical

Engineering (SBEB) and held in Armação de Buzios, Rio de Janeiro, Brazil from 21-25 October, 2018. Topics of the proceedings include these 11 tracks: • Bioengineering • Biomaterials, Tissue Engineering and Artificial Organs • Biomechanics and Rehabilitation • Biomedical Devices and Instrumentation • Biomedical Robotics, Assistive Technologies and Health Informatics • Clinical Engineering and Health Technology Assessment • Metrology, Standardization, Testing and Quality in Health • Biomedical Signal and Image Processing • Neural Engineering • Special Topics • Systems and Technologies for Therapy and Diagnosis

Mail Technology - IMechE (Institution of Mechanical Engineers) 2001-08-22
Mail Technology Evolution to e-Revolution explores how rapid technological advances and liberalization of the postal world is transforming individuals and business customers' options and expectations.
Computational Radiomics for Cancer Characterization - Omar Sultan Al-Kadi 2022-10-21

Ensembles in Machine Learning Applications - Oleg Okun 2011-09-01
This book contains the extended papers presented at the 3rd Workshop on Supervised and Unsupervised Ensemble Methods and their Applications (SUEMA) that was held in conjunction with the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD 2010, Barcelona, Catalonia, Spain). As its two predecessors, its main theme was ensembles of supervised and unsupervised algorithms - advanced machine learning and data mining technique. Unlike a single classification or clustering algorithm, an ensemble is a group of algorithms, each of which first independently solves the task at hand by assigning a class or cluster label (voting) to instances in a dataset and after that all votes are combined together to produce the final class or cluster membership. As a result, ensembles often outperform best single algorithms in many real-world

problems. This book consists of 14 chapters, each of which can be read independently of the others. In addition to two previous SUEMA editions, also published by Springer, many chapters in the current book include pseudo code and/or programming code of the algorithms described in them. This was done in order to facilitate ensemble adoption in practice and to help to both researchers and engineers developing ensemble applications.

Image Analysis and Recognition - Aurélio Campilho 2010-06-09
This book constitutes the thoroughly refereed proceedings of the 7th International Conference, ICIAR 2010, held in Póvoa de Varzin, Portugal in June 2010. The 88 revised full papers were selected from 164 submissions. The papers are organized in topical sections on Image Morphology, Enhancement and Restoration, Image Segmentation, Feature Extraction and Pattern Recognition, Computer Vision, Shape, Texture and Motion Analysis, Coding, Indexing, and Retrieval, Face Detection and Recognition, Biomedical Image Analysis, Biometrics and Applications

Machine Intelligence and Smart Systems - Shikha Agrawal 2022-05-23
This book is a collection of peer-reviewed best selected research papers presented at the Second International Conference on Machine Intelligence and Smart Systems (MISS 2021), organized during September 24-25, 2021, in Gwalior, India. The book presents new advances and research results in the fields of machine intelligence, artificial intelligence and smart systems. It includes main paradigms of machine intelligence algorithms, namely (1) neural networks, (2) evolutionary computation, (3) swarm intelligence, (4) fuzzy systems and (5) immunological computation. Scientists, engineers, academicians, technology developers, researchers, students and government officials will find this book useful in handling their complicated real-world issues by using machine intelligence methodologies.
Land Cover Classification of Remotely Sensed Images - S. Jenicka 2021-03-10

The book introduces two domains namely Remote Sensing and Digital Image Processing. It discusses remote sensing, texture, classifiers, and procedures for performing the texture-based segmentation and land cover classification. The first chapter discusses the important terminologies in remote sensing, basics of land cover classification, types of remotely sensed images and their characteristics. The second chapter introduces the texture and a detailed literature survey citing papers related to texture analysis and image processing. The third chapter describes basic texture models for gray level images and multivariate texture models for color or remotely sensed images with relevant Matlab source codes. The fourth chapter focuses on texture-based classification and texture-based segmentation. The Matlab source codes for performing supervised texture based segmentation using basic texture models and minimum distance classifier are listed. The fifth chapter describes supervised and unsupervised classifiers. The experimental results obtained using a basic texture model (Uniform Local Binary Pattern) with the classifiers described earlier are discussed through the relevant Matlab source codes. The sixth chapter describes land cover classification procedure using multivariate (statistical and spectral) texture models and minimum distance classifier with Matlab source codes. A few performance metrics are also explained. The seventh chapter explains how texture based segmentation and land cover classification are performed using the hidden Markov model with relevant Matlab source codes. The eighth chapter gives an overview of spatial data analysis and other existing land cover classification methods. The ninth chapter addresses the research issues and challenges associated with land cover classification using textural approaches. This book is useful for undergraduates in Computer Science and Civil Engineering and postgraduates who plan to do research or project work in digital image processing. The book can serve as a

guide to those who narrow down their research to processing remotely sensed images. It addresses a wide range of texture models and classifiers. The book not only guides but aids the reader in implementing the concepts through the Matlab source codes listed. In short, the book will be a valuable resource for growing academicians to gain expertise in their area of specialization and students who aim at gaining in-depth knowledge through practical implementations. The exercises given under texture based segmentation (excluding land cover classification exercises) can serve as lab exercises for the undergraduate students who learn texture based image processing.

Biomedical Engineering Systems and Technologies - Ana Fred 2008-11-27

This book contains the best papers of the First International Joint Conference on Biomedical Engineering Systems and Technologies (BIOSTEC 2008), organized by the Institute for Systems and Technologies of Information Control and Communication (INSTICC), technically co-sponsored by the IEEE Engineering in Medicine and Biology Society (EMBS), ACM SIGART and the Workflow Management Coalition (WfMC), in cooperation with AAAI. The purpose of the International Joint Conference on Biomedical Engineering Systems and Technologies is to bring together researchers and practitioners, including engineers, biologists, health professionals and informatics/computer scientists, interested in both theoretical advances and applications of information systems, artificial intelligence, signal processing, electronics and other engineering tools in knowledge areas related to biology and medicine. BIOSTEC is composed of three co-located conferences; each specializes in one of the aforementioned main knowledge areas, namely: • BIODEVICES (International Conference on Biomedical Electronics and - vices) focuses on aspects related to electronics and mechanical engineering, - pecially equipment and materials inspired from biological systems and/or - dressing biological requirements. Monitoring devices,

instrumentation sensors and systems, biorobotics, micro-nanotechnologies and biomaterials are some of the technologies addressed at this conference.

Frames and Operator Theory in Analysis and Signal Processing -

David R. Larson 2008

This volume contains articles based on talks presented at the Special Session Frames and Operator Theory in Analysis and Signal Processing, held in San Antonio, Texas, in January of 2006.

Computer-Aided Glaucoma Diagnosis

System - Arwa Ahmed Gasm Elseid

2020-05-14

Glaucoma is the second leading cause of blindness globally. Early detection and treatment can prevent its progression to avoid total blindness. This book discusses and reviews current approaches for detection and examines new approaches for diagnosing glaucoma using CAD system. Computer-Aided Glaucoma Diagnosis System, Chapter 1 provides a brief introduction of the disease and current methodology used to diagnose it today. Chapter 2 presents a review of the medical background of the disease, followed by a theoretical and mathematical background used in fundus image processing. Chapter 3 is a literature review about segmentation and feature extraction. Chapter 4 describes the formulation of the proposed methodology. In Chapter 5, the results of optic disc and optic cup

segmentation algorithm are presented, the feature extraction and selection method, experimental results and performance evaluations of the classifier are given. Chapter 6 presents the conclusions and discussion of the future potential for the diagnostic system. This book is intended for biomedical engineers, computer science students, ophthalmologists and radiologists looking to develop a reliable automated computer-aided diagnosis system (CAD) for detecting glaucoma and improve diagnosis of the disease. Key Features Discusses a reliable automated computer-aided diagnosis system (CAD) for detecting glaucoma and presents an algorithm that detects optic disc and optic cup Assists ophthalmologists and researchers to test a new diagnostic method that reduces the effort and time of the doctors and cost to the patients Discusses techniques to reduce human error and minimize the miss detection rate and facilitate early diagnosis and treatment Presents algorithms to detect cup and disc color, shape features and RNFL texture features Dr. Arwa Ahmed Gasm Elseid is an assistant professor, Department of Biomedical Engineering, Sudan University of Science and Technology, Khartoum, Sudan. Dr. Alnazier Osman Mohammed Hamza is professor of Medical Imaging, College of Engineering, Sudan University of Sciences and Technology, Khartoum, Sudan.