Fourier Descriptors And Their Applications In Biology

Fourier Descriptors and Their Applications in Biology-Pete E. Lestrel 1997-05-13 This book discusses the theory and the practice of using Fourier descriptors as a method for measuring the shape of whole, or parts of organisms.

On the Practical Application of Fourier Descriptors to the Recognition of Plane Shapes-S. S. Mahdi 1987

Soft Computing in Industrial Applications-Ashraf Saad 2007-08-07 Here is a collection of papers presented at the 11th On-line World Conference on Soft Computing in Industrial Applications, held in September-October 2006. This carefully edited book provides a comprehensive overview of recent advances in the industrial applications of soft computing and covers a wide range of application areas, including data analysis and data mining, computer graphics, intelligent control, systems, pattern recognition, classifiers, as well as modeling optimization.

Morphology, Shape and Phylogeny-Norman MacLeod 2002-02-07 Generally, biologists and mathematicians who study the shape and form of organisms have largely been working in isolation from those who work on evolutionary relationships through the analysis of common characteristics. Increasingly however, dialogue between the two communities is beginning to develop - but other than a handful of journal papers, t

Morphometrics for the Life Sciences-Pete E Lestrel 2000-08-04 The idea of form is one of the most
fundamental concepts underlying all of the sciences. Our visual system is so well developed that we are able to effortlessly classify and compare visual images. What is not so well developed has been our ability to measure this visual information. This book examines a number of recent approaches currently in use to numerically characterize the biological form. It presents a unique overview of these methods, starting with a review of measurement set in a historical framework. The book will be of interest to graduate students in addition to a wide range of researchers, including those in the specialized fields of human biology, growth and development, orthodontics, botany, biology, ecology, zoology, as well as dentistry and medicine.

Soft Computing in Industrial Applications-X.Z. Gao 2010-09-07 The 14th onlineWorld Conference on Soft Computing in Industrial Applications provides a unique opportunity for soft computing researchers and practitioners to publish high quality papers and discuss research issues in detail without incurring a huge cost. The conference has established itself as a truly global event on the Internet. The quality of the conference has improved over the years. The WSC14 conference has covered new trends in soft computing to state of the art applications. The conference has also added new features such as community tools, syndication, and multimedia online presentations.

Advanced Sensors for Biomedical Applications-Olfa Kanoun

Biological Shape Analysis-Pete E Lestrel 2011-06-20 The Proceedings describe the current state of research dealing with biological shape analysis. The quantitative analysis of the shape of biological organisms represents a challenge that has now seen breakthroughs with new methodologies such as elliptical Fourier analysis, quantitative trait loci analysis (QTLs), chromosome segment substitution lines (CSSLs), thin plate splines, etc. The Proceedings also illustrate the diversity of disciplines that are actively involved in the characterization and analysis of biological shape. Moreover, many of the
papers focus on the relationship of the shape to the processes that determine the biological form, an issue of major continuing concern in biology. Contents: Botanical Studies: Flowers and Leaf Structures Agricultural Crops Entomological Studies: Shape of Stag Beetles Human Morphological Shape Studies: In a Forensic Context Skull and Cranium Shape of the Eye Orbits Shape of Long Bones Geometric Models of Shape Readership: Students, professionals and the general public with an interest in biology. Keywords: Biological Shape Analysis; Agricultural Genetics; Botany; Entomology; Forensics; Physical Anthropology; Human Anatomy; Fourier Analysis; Applied Mathematics; Geometry Key Features: Highlights new methodologies developed and used quantitatively to describe the biological form Relates the observed biological shape to the underlying processes that determine the shape Show cases the tremendous diversity of disciplines actively involved in the characterization and analysis of biological shapes

Measuring Shape-F. Brent Neal 2017-12-19 "John Russ is the master of explaining how image processing gets applied to real-world situations. With Brent Neal, he’s done it again in Measuring Shape, this time explaining an expanded toolbox of techniques that includes useful, state-of-the-art methods that can be applied to the broad problem of understanding, characterizing, and measuring shape. He has a gift for finding the kernel of a particular algorithm, explaining it in simple terms, then giving concrete examples that are easily understood. His perspective comes from solving real-world problems and separating out what works in practice from what is just an abstract curiosity."

—Tom Malzbender, Hewlett-Packard Laboratories, Palo Alto, California, USA Useful for those working in fields including industrial quality control, research, and security applications, Measuring Shape is a handbook for the practical application of shape measurement. Covering a wide range of shape measurements likely to be encountered in the literature and in software packages, this book
presents an intentionally diverse set of examples that illustrate and enable readers to compare methods used for measurement and quantitative description of 2D and 3D shapes. It stands apart through its focus on examples and applications, which help readers quickly grasp the usefulness of presented techniques without having to approach them through the underlying mathematics. An elusive concept, shape is a principal governing factor in determining the behavior of objects and structures. Essential to recognizing and classifying objects, it is the central link in manmade and natural processes. Shape dictates everything from the stiffness of a construction beam, to the ability of a leaf to catch water, to the marketing and packaging of consumer products. This book emphasizes techniques that are quantitative and produce a meaningful yet compact set of numerical values that can be used for statistical analysis, comparison, correlation, classification, and identification. Written by two renowned authors from both industry and academia, this resource explains why users should select a particular method, rather than simply discussing how to use it. Showcasing each process in a clear, accessible, and well-organized way, they explore why a particular one might be appropriate in a given situation, yet a poor choice in another. Providing extensive examples, plus full mathematical descriptions of the various measurements involved, they detail the advantages and limitations of each method and explain the ways they can be implemented to discover important correlations between shape and object history or behavior. This uncommon assembly of information also includes sets of data on real-world objects that are used to compare the performance and utility of the various presented approaches.

Biological Shape Analysis-Pete E Lestrel 2015-06-11 The proceedings were designed to bring together researchers who share a common interest in the quantitative description of the biological form. Participants came from very diverse disciplines such as agricultural genetics, botany,
entomology, forensics, human anatomy, paleontology, human evolution, primatology, dentistry, etc. The participants applied various methodological approaches that are being increasingly used to describe aspects of the biological form. These techniques include neural networks, Fourier descriptors, shape mapping, genome-wide association studies (GWAS), Riemann curves, surface mapping, etc. A number of the contributions in the proceedings represent state of the art research that reflects advances in that discipline. Contents: Botanical Studies: Leaf Structures Agricultural Crops Entomological Explorations Genomic Shape Considerations Zoological Inquiries Human Morphological Investigations: Facial Morphology Cranial Structures in 3-D Whole Body Studies Readership: Graduate students and researchers in human biology, genetics and genomics, plant science and agricultural science, evolution biology and dentistry and sports medicine. Keywords: Biological Shape Analysis; Agricultural Genetics; Botany; Entomology; Forensics; Physical Anthropology; Paleontology; Human Anatomy; Fourier Analysis; Applied Mathematics; Morphometrics Modern Trends in Diatom Identification - Gabriel Cristóbal 2020-05-28 High-resolution images of phytoplankton cells such as diatoms or desmids, which are useful for monitoring water quality, can now be provided by digital microscopes, facilitating the automated analysis and identification of specimens. Conventional approaches are based on optical microscopy; however, manual image analysis is impractical due to the huge diversity of this group of microalgae and its great morphological plasticity. As such, there is a need for automated recognition techniques for diagnostic tools (e.g. environmental monitoring networks, early warning systems) to improve the management of water resources and decision-making processes. Describing the entire workflow of a bioindicator system, from capture, analysis and identification to the determination of quality indices, this book provides insights into the current state-of-the-art in automatic identification systems in
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Computer Vision Applications-Joan B. Lurie 1992
Machine Learning Methods with Noisy, Incomplete or Small Datasets-Jordi Solé-Casals 2021-08-17

Over the past years, businesses have had to tackle the issues caused by numerous forces from political, technological and societal environment. The changes in the global market and increasing uncertainty require us to focus on disruptive innovations and to investigate this phenomenon from different perspectives. The benefits of innovations are related to lower costs, improved efficiency, reduced risk, and better response to the customers’ needs due to new products, services or processes. On the other hand, new business models expose various risks, such as cyber risks, operational risks, regulatory risks, and others. Therefore, we believe that the entrepreneurial behavior and global mindset of decision-makers significantly contribute to the development of innovations, which benefit by closing the prevailing gap between developed and developing countries. Thus, this Special Issue contributes to closing the research gap in the literature by providing a platform for a scientific debate on innovation, internationalization and entrepreneurship, which would facilitate improving the resilience of businesses to future disruptions. Order Your Print Copy
Pattern recognition basically deals with the recognition of patterns, shapes, objects, things in images. Document image analysis was one of the very first applications of pattern recognition and even of computing. But until the 1980s, research in this field was mainly dealing with text-based documents, including OCR (Optical Character Recognition) and page layout analysis. Only a few people were looking at more specific documents such as music sheet, bank cheques or forms. The community of graphics recognition became visible in the late 1980s. Their specific interest was to recognize high-level objects represented by line drawings and graphics. The specific pattern recognition problems they had to deal with was raster-to-graphics conversion (i.e., recognizing graphical primitives in a cluttered pixel image), text-graphics separation, and symbol recognition. The specific problem of symbol recognition in graphical documents has received a lot of attention. The symbols to be recognized can be musical notation, electrical symbols, architectural objects, pictograms in maps, etc. At first glance, the symbol recognition problems seems to be very similar to that of character recognition; after all, characters are basically a subset of symbols. Therefore, the large know-how in OCR has been extensively used in graphical symbol recognition: starting with segmenting the document to extract the symbols, extracting features from the symbols, and then recognizing them through classification or matching, with respect to a training/learning set.

Stock Identification Methods, 2e, continues to provide a comprehensive review of the various disciplines used to study the population structure of fishery resources. It represents the worldwide experience and perspectives of experts on each method, assembled through a working group of the International Council for the Exploration of the Sea. The book is organized to foster interdisciplinary analyses and conclusions about stock
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structure, a crucial topic for fishery science and management. Technological advances have promoted the development of stock identification methods in many directions, resulting in a confusing variety of approaches. Based on central tenets of population biology and management needs, this valuable resource offers a unified framework for understanding stock structure by promoting an understanding of the relative merits and sensitivities of each approach. Describes 18 distinct approaches to stock identification grouped into sections on life history traits, environmental signals, genetic analyses, and applied marks Features experts' reviews of benchmark case studies, general protocols, and the strengths and weaknesses of each identification method Reviews statistical techniques for exploring stock patterns, testing for differences among putative stocks, stock discrimination, and stock composition analysis Focuses on the challenges of interpreting data and managing mixed-stock fisheries

Biological Shape Analysis-Pete E Lestrel 2013-06-04 This proceedings volume describes the current state of research dealing with biological shape analysis. The quantitative analysis of the shape of biological organisms represents a challenge that has now seen breakthroughs with new methodologies such as elliptical Fourier analysis, quantitative trait loci analysis (QTLs), thin plate splines, etc. The volume also illustrates the diversity of disciplines that are actively involved in the characterization and analysis of the biological shape. Some of the papers deal with the need to relate the underlying genome responsible for the actual observed characteristics of form. Moreover, many of the papers focus on the relationship of the shape to the processes that determine the biological form, an issue of major continuing concern in biology. This volume brings together for the second time practitioners from a variety of disciplines who have been concerned with the necessity of applying new methods to the analysis of biological shape. Previous methodologies based on the
conventional metrical approach (distances, angles and ratios), have not been able to adequately
capture — in quantitative terms — the subtleties and complexities of biological form due to its
irregularity. This volume represents an initial attempt to quantitatively characterize the biological
form in both two- and three-dimensions, as it is actually perceived. There is no volume available that
deals with the subject matter of these Proceedings. The papers represent, as in the first
proceedings, a unique look at: (1) new methodologies developed and used quantitatively describe
the biological form; (2) the need to relate the observed biological shape to the underlying processes
that determine the shape; and (3) the tremendous diversity of disciplines actively involved in the
characterization and analysis of biological shapes. These range from physical anthropology,
anatomy, genetics, botany, entomology, forensics, to applied mathematics, etc. Contents:
Agricultural Crop Selection: Can Machine Vision Substitute for Plant Breeders' Eye? A Case of Whole Crop Shape
Selection in Soybean Breeding (Seishi Ninomiya) Entomological Studies: Genetic Architecture of the Developmental Buffering Machinery for Wing Shape in Fruit Flies (K H Takahashi) Effect of Male Genital Spines on Female Remating Propensity in the West Indian Sweet Potato Weevil, Euscepes postfasciatus (N Kumano, T Kuriwada, K Shiromoto and H Tatsuta)
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Lestrel, C A Wolfe and A Bodt)Whole Body Studies: Assessment of Body Image Perception: A Preliminary Study Using Elliptic Fourier Descriptors (P E Lestrel, N Miyake, M Ishihara and C A Wolfe)Primate Studies: Craniofacial Covariation in Extant Great Apes: A Geometric Morphometric Study (D Neaux, F Guy, E Gilissen, W Coudyzer, P Vignaud and S Ducrocq) Readership: Students and researchers in human biology, genetics and genomics, plant science and agricultural science, evolution biology and dentistry and sports medicine. Keywords: Biological Shape Analysis; Agricultural Genetics; Botany; Entomology; Forensics; Physical Anthropology; Human Anatomy; Dentistry; Medicine; Fourier Analysis; Applied Mathematics; GeometryKey Features: New methodologies developed and used quantitatively describe the biological form. The need to relate the observed biological shape to the underlying processes that determine the shape. The tremendous diversity of disciplines actively involved in the characterization and analysis of biological shapes. These range from physical anthropology, anatomy, genetics, botany, entomology, forensics, applied mathematics, etc.

Artificial Intelligence Research and Development - K. Gibert 2013-10-09 For almost twenty years the Catalan Association of Artificial Intelligence (ACIA) has been promoting cooperation between researchers in artificial intelligence within the Catalan speaking community. This book presents the proceedings of the 16th International Conference (CCIA 2013), held at the University of Vic (UVIC), Catalonia, Spain, in October 2013. This annual conference aims to foster discussion of the latest developments in artificial intelligence within the community of Catalan countries, as well as amongst members of the AI community worldwide. The book contains the 26 full papers, 5 short papers and 12 poster presentations from the conference, which are grouped under the following topics: relational learning, planning; satisfiability and constraints; perception and image processing;
preprocessing; patterns extraction and learning; post-processing, model interpretability and decision support; recommenders, similarity and CBR; and multiagent systems.

Biological Shape Analysis-Pete E. Lestrel 2013 This proceedings volume describes the current state of research dealing with biological shape analysis. The quantitative analysis of the shape of biological organisms represents a challenge that has now seen breakthroughs with new methodologies such as elliptical Fourier analysis, quantitative trait loci analysis (QTLs), thin plate splines, etc. The volume also illustrates the diversity of disciplines that are actively involved in the characterization and analysis of the biological shape. Some of the papers deal with the need to relate the underlying genome responsible for the actual observed characteristics of form. Moreover, many of the papers focus on the relationship of the shape to the processes that determine the biological form, an issue of major continuing concern in biology. This volume brings together for the second time practitioners from a variety of disciplines who have been concerned with the necessity of applying new methods to the analysis of biological shape. Previous methodologies based on the conventional metrical approach (distances, angles and ratios), have not been able to adequately capture the subtleties and complexities of biological form due to its irregularity. This volume represents an initial attempt to quantitatively characterize the biological form in both two- and three-dimensions, as it is actually perceived. There is no volume available that deals with the subject matter of these Proceedings. The papers represent, as in the first proceedings, a unique look at: (1) new methodologies developed and used quantitatively describe the biological form; (2) the need to relate the observed biological shape to the underlying processes that determine the shape; and (3) the tremendous diversity of disciplines actively involved in the characterization and analysis of biological shapes. These range from physical anthropology,
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anatomy, genetics, botany, entomology, forensics, to applied mathematics, etc.

Bernard G. Sarnat-Pete E. Lestrel 2008 This is a biography of Bernard G Sarnat, SB, MD, MS, DDS, FACS, a remarkable man who lived for most of the 20th century. Born in 1912 in the USA, he was the son of immigrant parents from Belarus, a former republic of the USSR. He received his MD degree from the University of Chicago, and his MS and DDS degrees from the University of Illinois. Dr Sarnat was a practitioner in the formative years of modern plastic surgery as well as an internationally known biological researcher in the area of craniofacial biology. He was one of the first bone researchers to apply the stain alizarin red S to document the pattern of dental and bone growth, and has published over 220 research papers dealing with bone and teeth biology.

Bernard G Sarnat: 20th Century Plastic Surgeon and Biological Scientist is the story of not only a successful physician-scientist, but also a warm and caring individual who is dedicated to his family, as revealed by the many personal details in this biography. Thus, this biography is intended not just for researchers in the biology of bone and teeth, but also for medical and dental students as well the general reader interested in science and medicine.


Progress in Pattern Recognition, Image Analysis, Computer Vision, and Applications-Isabelle Bloch 2010-11-02 Pattern recognition is a central topic in contemporary computer sciences, with continuously evolving topics, challenges, and methods, including machine learning, content-based image retrieval, and model- and knowledge-based - proaches, just to name a few. The Iberoamerican Congress on Pattern Recogn- tion (CIARP) has become established as a high-quality conference, highlighting the recent evolution of the domain. These proceedings include all papers presented
during the 15th edition of this conference, held in Sao Paulo, Brazil, in November 2010. As was the case for previous conferences, CIARP 2010 attracted participants from around the world with the aim of promoting and disseminating ongoing research on mathematical methods and computing techniques for pattern recognition, computer vision, image analysis, and speech recognition, as well as their applications in such diverse areas as robotics, health, entertainment, space exploration, telecommunications, data mining, document analysis, and natural language processing and recognition, to name only a few of them. Moreover, it provided a forum for scientific research, experience exchange, sharing new knowledge and increasing cooperation between research groups in pattern recognition and related areas. It is important to underline that these conferences have contributed significantly to the growth of national associations for pattern recognition in the Iberoamerican region, all of them as members of the International Association for Pattern Recognition (IAPR).

Biomedical Image Analysis-Rangaraj M. Rangayyan 2004-12-30 Computers have become an integral part of medical imaging systems and are used for everything from data acquisition and image generation to image display and analysis. As the scope and complexity of imaging technology steadily increase, more advanced techniques are required to solve the emerging challenges.

Biomedical Image Analysis demonstrates

Innovative Data Communication Technologies and Application-Jennifer S. Raj 2020-01-30 This book presents emerging concepts in data mining, big data analysis, communication, and networking technologies, and discusses the state-of-the-art in data engineering practices to tackle massive data distributions in smart networked environments. It also provides insights into potential data distribution challenges in ubiquitous data-driven networks, highlighting research on the theoretical
and systematic framework for analyzing, testing and designing intelligent data analysis models for evolving communication frameworks. Further, the book showcases the latest developments in wireless sensor networks, cloud computing, mobile network, autonomous systems, cryptography, automation, and other communication and networking technologies. In addition, it addresses data security, privacy and trust, wireless networks, data classification, data prediction, performance analysis, data validation and verification models, machine learning, sentiment analysis, and various data analysis techniques.

Digital Image Processing-Wilhelm Burger 2016-03-25 This revised and expanded new edition of an internationally successful classic presents an accessible introduction to the key methods in digital image processing for both practitioners and teachers. Emphasis is placed on practical application, presenting precise algorithmic descriptions in an unusually high level of detail, while highlighting direct connections between the mathematical foundations and concrete implementation. The text is supported by practical examples and carefully constructed chapter-ending exercises drawn from the authors' years of teaching experience, including easily adaptable Java code and completely worked out examples. Source code, test images and additional instructor materials are also provided at an associated website. Digital Image Processing is the definitive textbook for students, researchers, and professionals in search of critical analysis and modern implementations of the most important algorithms in the field, and is also eminently suitable for self-study.

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(SRGE). The papers cover current research in machine learning, big data, Internet of Things, biomedical engineering, fuzzy logic and security, as well as intelligence swarms and optimization.

Computer-Graphic Facial Reconstruction-John G. Clement 2005-07-02 This unique books looks at a cost-efficient, fast and accurate means of facial reconstruction--from segmented, decomposed, or skeletal remains--using computer-graphic and computational means. Computer-Graphic Facial Reconstruction is designed as a valuable resource for those scientists designing new research projects and protocols, as well as a practical handbook of methods and techniques for medico-legal practitioners who actually identify the faceless victims of crime. It looks at a variety of approaches: artificial intelligence using neural networks, case-based reasoning, Bayesian belief systems, along with a variety of imaging methods: radiological, CT, MRI and the use of imaging devices. The methods described in this book complement, or may even replace, the less-reliable, more traditional means of securing identification by presumptive means, i.e., recognition of clothing, personal effects and clay reconstruction. - Covers cutting-edge technologies in the context of historical forensic reconstruction methods - Features stellar authors from around the globe - Bridges the areas of computer graphics, animation, and forensic anthropology

Image Analysis and Recognition-Mohamed Kamel 2015-07-03 This book constitutes the thoroughly refereed proceedings of the 12th International Conference on Image Analysis and Recognition, ICIAR 2015, held in Niagara Falls, ON, Canada, in July 2015. The 55 revised full papers and 5 short papers presented were carefully reviewed and selected from 80 submissions. The papers are organized in the following topical sections: image quality assessment; image enhancement; image segmentation, registration and analysis; image coding, compression and encryption; dimensionality reduction and classification; biometrics; face description, detection and recognition; human activity
Fourier Descriptors And Their Applications In Biology

Ten years of „Fuzzy Days“ in Dortmund! What started as a relatively small workshop in 1991 has now become one of the best known smaller conferences on Computational Intelligence in the world. It fact, it was (to my best knowledge) the ?rst conference to use this term, in 1994, although I confess that another, larger conference was announced ?rst and the trade mark “Computational Intelligence was not coined in Dortmund. I believe, that the success of this conference is grounded on the quality of its reviewedandinvitedpapersaswellasitsgoodorganization. Fromthebeginning, we have sent every paper anonymously to ?ve referees, and we have always accepted only around 50% of the papers sent in. This year it was a little less than that. I would like to thank everybody who helped us by considering Dortmund’s Fuzzy Days as the conference at which to appear. I know that among the abstracts not accepted there were some quite good ones, but we were restricted to a ?xed number. I also know that referees do a good job but cannot always judge wisely from abstracts. Hence my apologies to those who did not make it this year. Please try again! I would like to point out that our conference also has a good regional reputation. I am grateful to the City of Dortmund, its Lord Mayor Dr. Langemeyer, the Dortmund project, the DFG - Deutsche Forschungsgemeinschaft, the KVR - Kommunalverband Ruhrgebiet, the Martin-Schmeißer-Stiftung, and the C-line AG/Quantum GmbH for their valuable support.

Handbook of Image Processing and Computer Vision-Arcangelo Distante 2020-05-28 Across three volumes, the Handbook of Image Processing and Computer Vision presents a comprehensive review of the full range of topics that comprise the field of computer vision, from the acquisition of signals and formation of images, to learning techniques for scene understanding. The authoritative insights
presented within cover all aspects of the sensory subsystem required by an intelligent system to perceive the environment and act autonomously. Volume 1 (From Energy to Image) examines the formation, properties, and enhancement of a digital image. Topics and features: • Describes the fundamental processes in the field of artificial vision that enable the formation of digital images from light energy • Covers light propagation, color perception, optical systems, and the analog-to-digital conversion of the signal • Discusses the information recorded in a digital image, and the image processing algorithms that can improve the visual qualities of the image • Reviews boundary extraction algorithms, key linear and geometric transformations, and techniques for image restoration • Presents a selection of different image segmentation algorithms, and of widely-used algorithms for the automatic detection of points of interest • Examines important algorithms for object recognition, texture analysis, 3D reconstruction, motion analysis, and camera calibration • Provides an introduction to four significant types of neural network, namely RBF, SOM, Hopfield, and deep neural networks This all-encompassing survey offers a complete reference for all students, researchers, and practitioners involved in developing intelligent machine vision systems. The work is also an invaluable resource for professionals within the IT/software and electronics industries involved in machine vision, imaging, and artificial intelligence. Dr. Cosimo Distante is a Research Scientist in Computer Vision and Pattern Recognition in the Institute of Applied Sciences and Intelligent Systems (ISAI) at the Italian National Research Council (CNR). Dr. Arcangelo Distante is a researcher and the former Director of the Institute of Intelligent Systems for Automation (ISSIA) at the CNR. His research interests are in the fields of Computer Vision, Pattern Recognition, Machine Learning, and Neural Computation.

Biometric ID Management and Multimodal Communication—Julian Fierrez 2009-09-29 This book
constitutes the research papers presented at the Joint 2101 & 2102 International Conference on Biometric ID Management and Multimodal Communication. BioID_MultiComm'09 is a joint International Conference organized cooperatively by COST Actions 2101 & 2102. COST 2101 Action is focused on 'Biometrics for Identity Documents and Smart Cards (BIDS)', while COST 2102 Action is entitled 'Cross-Modal Analysis of Verbal and Non-verbal Communication'. The aim of COST 2101 is to investigate novel technologies for unsupervised multimodal biometric authentication systems using a new generation of biometrics-enabled identity documents and smart cards. COST 2102 is devoted to develop an advanced acoustical, perceptual and psychological analysis of verbal and non-verbal communication signals originating in spontaneous face-to-face interaction, in order to identify algorithms and automatic procedures capable of recognizing human emotional states.

Springer Handbook of Automation-Shimon Y. Nof 2009-07-16 This handbook incorporates new developments in automation. It also presents a widespread and well-structured conglomeration of new emerging application areas, such as medical systems and health, transportation, security and maintenance, service, construction and retail as well as production or logistics. The handbook is not only an ideal resource for automation experts but also for people new to this expanding field.

Biomedical Image Analysis and Machine Learning Technologies: Applications and Techniques-Gonzalez, Fabio A. 2009-12-31 Medical images are at the base of many routine clinical decisions and their influence continues to increase in many fields of medicine. Since the last decade, computers have become an invaluable tool for supporting medical image acquisition, processing, organization and analysis. Biomedical Image Analysis and Machine Learning Technologies: Applications and Techniques provides a panorama of the current boundary between biomedical complexity coming from the medical image context and the multiple techniques which have been used for solving many
of these problems. This innovative publication serves as a leading industry reference as well as a source of creative ideas for applications of medical issues.

Digital Multimedia: Concepts, Methodologies, Tools, and Applications-Management Association, Information Resources 2017-09-13 Contemporary society resides in an age of ubiquitous technology. With the consistent creation and wide availability of multimedia content, it has become imperative to remain updated on the latest trends and applications in this field. Digital Multimedia: Concepts, Methodologies, Tools, and Applications is an innovative source of scholarly content on the latest trends, perspectives, techniques, and implementations of multimedia technologies. Including a comprehensive range of topics such as interactive media, mobile technology, and data management, this multi-volume book is an ideal reference source for engineers, professionals, students, academics, and researchers seeking emerging information on digital multimedia.

Implementation and Validation of Haptic Training in Virtual Surgical Environments-David Feygin 2002

Graphics Recognition. Recent Advances and New Opportunities-Liu Wenyin 2008-09-22 This book contains refereed and improved papers presented at the Seventh IAPR Workshop on Graphics Recognition (GREC2007), held in Curitiba, Brazil, September 20-21, 2007. The GREC workshops provide an excellent opportunity for researchers and practitioners at all levels of experience to meet colleagues and to share new ideas and knowledge about graphics recognition methods. Graphics recognition is a subfield of document image analysis that deals with graphical entities in engineering drawings, sketches, maps, architectural plans, musical scores, mathematical notation, tables, diagrams, etc. GREC2007 continued the tradition of past workshops held at Penn State University, USA (GREC 1995, LNCS Volume 1072, Springer, 1996); Nancy, France (GREC 1997, LNCS Volume
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1389, Springer, 1998); Jaipur, India (GREC 1999, LNCS Volume 1941, Springer, 2000); Kingston, Canada (GREC 2001, LNCS Volume 2390, Springer, 2002); Barcelona, Spain (GREC 2003, LNCS Volume 3088, Springer, 2004); and Hong Kong, China (GREC 2005, LNCS Volume 3926, Springer, 2006). GREC2007 was also the first edition of a GREC workshop held at the same location of the ICDAR conference and it facilitated people to attend to both events. The program of GREC2007 was organized in a single-track 2-day workshop. It comprised several sessions dedicated to specific topics.

Medical Imaging Systems Techniques and Applications: Cardiovascular systems-Cornelius T. Leondes 1997 First Published in 2004. Routledge is an imprint of Taylor & Francis, an informa company.

Computational Methods and Data Engineering-Vijendra Singh 2020-08-19 This book gathers selected high-quality research papers from the International Conference on Computational Methods and Data Engineering (ICMDE 2020), held at SRM University, Sonipat, Delhi-NCR, India. Focusing on cutting-edge technologies and the most dynamic areas of computational intelligence and data engineering, the respective contributions address topics including collective intelligence, intelligent transportation systems, fuzzy systems, data privacy and security, data mining, data warehousing, big data analytics, cloud computing, natural language processing, swarm intelligence, and speech processing.
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