Background Modeling And Foreground Detection For Video Surveillance

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Pattern Recognition and Machine Intelligence - Marzena Kryszkiewicz 2015
This book constitutes the proceedings of the 6th International Conference on Pattern Recognition and Machine Intelligence, PReMI 2015, held in Warsaw, Poland, in June/July 2015. The total of 53 full papers and 1 short paper presented in this volume

were carefully reviewed and selected from 90 submissions. They were organized in topical sections named: foundations of machine learning; image processing; image retrieval; image tracking; pattern recognition; data mining techniques for large scale data; fuzzy computing; rough sets; bioinformatics; and applications of artificial intelligence.

Introduction to Video and Image Processing - Thomas B. Moeslund 2012-01-25

This textbook presents the fundamental concepts and methods for understanding and working with images and video in an unique, easy-to-read style which ensures the material is accessible to a wide audience. Exploring more than just the basics of image processing, the text provides a specific focus on the practical design and implementation of real systems for processing video data. Features: includes more than 100 exercises, as well as C-code snippets of the key algorithms; covers topics on image acquisition, color images, point processing, neighborhood processing, morphology, BLOB analysis, segmentation in video, tracking, geometric transformation, and visual effects; requires only a minimal understanding of mathematics; presents two chapters dedicated to applications; provides a guide to defining suitable values for parameters in video and image processing systems, and to conversion between the RGB color representation and the HIS, HSV and YUV/YCbCr color representations.

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

Advances in Visual Computing - George Bebis 2015-12-17

The two volume set LNCS 9474 and LNCS 9475 constitutes the refereed proceedings of the 11th International Symposium on Visual Computing, ISVC 2015, held in Las Vegas, NV, USA in December 2015. The 115 revised full papers and 35 poster papers presented in this book were carefully reviewed and selected from 260 submissions. The papers are organized in topical sections: Part I (LNCS 9474) comprises computational bioimaging; computer graphics; motion and tracking; segmentation; recognition; visualization; mapping; modeling and surface reconstruction; advancing autonomy for aerial robotics; medical imaging; virtual reality; observing humans; spectral imaging and processing; intelligent transportation systems; visual perception and robotic systems. Part II (LNCS 9475): applications; 3D computer

vision; computer graphics; segmentation; biometrics; pattern recognition; recognition; and virtual reality.

GPU Computing Gems Emerald Edition - 2011-01-13

GPU Computing Gems Emerald Edition offers practical techniques in parallel computing using graphics processing units (GPUs) to enhance scientific research. The first volume in Morgan Kaufmann's Applications of GPU Computing Series, this book offers the latest insights and research in computer vision, electronic design automation, and emerging data-intensive applications. It also covers life sciences, medical imaging, ray tracing and rendering, scientific simulation, signal and audio processing, statistical modeling, video and image processing. This book is intended to help those who are facing the challenge of programming systems to effectively use GPUs to achieve efficiency and performance goals. It offers developers a window into diverse application areas, and the opportunity to gain insights from others' algorithm work that they may apply to their own projects. Readers will learn from the leading researchers in parallel programming, who have gathered their solutions and experience in one volume under the guidance of expert area editors. Each chapter is written to be accessible to researchers from other domains, allowing knowledge to cross-pollinate across the GPU spectrum. Many examples leverage NVIDIA's CUDA parallel computing architecture, the most widely-adopted massively parallel programming solution. The insights and ideas as well as practical hands-on skills in the book can be immediately put to use. Computer programmers, software engineers, hardware engineers, and computer science students will find this volume a helpful resource. For useful source codes discussed throughout the book, the editors invite readers to the following website: ..." Covers the breadth of industry from

scientific simulation and electronic design automation to audio / video processing, medical imaging, computer vision, and more Many examples leverage NVIDIA's CUDA parallel computing architecture, the most widely-adopted massively parallel programming solution Offers insights and ideas as well as practical "hands-on" skills you can immediately put to use

Advances in Multimedia Modeling - Kuo-Tien Lee 2010-12-14

This two-volume proceedings constitutes the refereed papers of the 17th International Multimedia Modeling Conference, MMM 2011, held in Taipei, Taiwan, in January 2011. The 51 revised regular papers, 25 special session papers, 21 poster session papers, and 3 demo session papers, were carefully reviewed and selected from 450 submissions. The papers are organized in topical sections on audio, image video processing, coding and compression; media content browsing and retrieval; multi-camera, multi-view, and 3D systems; multimedia indexing and mining; multimedia content analysis; multimedia signal processing and communications; and multimedia applications. The special session papers deal with content analysis for human-centered multimedia applications; large scale rich media data management; multimedia understanding for consumer electronics; image object recognition and compression; and interactive image and video search.

New Advances in Intelligent Decision Technologies - Gloria Phillips-Wren 2009-04-28

IDT (Intelligent Decision Technologies) seeks an interchange of research on intelligent systems and intelligent technologies which enhance or improve decision making in industry, government and academia. The focus is interdisciplinary in nature, and includes research on all aspects of intelligent decision technologies, from fundamental development to

the applied system. It constitutes a great honor and pleasure for us to publish the works and new research results of scholars from the First KES International Symposium on Intelligent Decision Technologies (KES IDT'09), hosted and organized by University of Hyogo in conjunction with KES International (Himeji, Japan, April, 2009). The symposium was concerned with theory, design, development, implementation, testing and evaluation of intelligent decision systems. Its topics included intelligent agents, fuzzy logic, multi-agent systems, artificial neural networks, genetic algorithms, expert systems, intelligent decision making support systems, information retrieval systems, geographic information systems, and knowledge management systems. These technologies have the potential to support decision making in many areas of management, international business, finance, accounting, marketing, healthcare, military applications, production, networks, traffic management, crisis response, and human interfaces.

From Visual Surveillance to Internet of Things - Lavanya Sharma 2019-10-16

From Visual Surveillance to Internet of Things: Technology and Applications is an invaluable resource for students, academicians and researchers to explore the utilization of Internet of Things with visual surveillance and its underlying technologies in different application areas. Using a series of present and future applications – business insights, indoor-outdoor securities, smart grids, human detection and tracking, intelligent traffic monitoring, e-health department and many more – this book will support readers to obtain a deeper knowledge in implementing IoT with visual surveillance. The book offers comprehensive coverage of the most essential topics, including: The rise of machines and communications to IoT (3G, 5G) Tools and technologies of IoT with visual

surveillance IoT with visual surveillance for real-time applications IoT architectures Challenging issues and novel solutions for realistic applications Mining and tracking of motion-based object data Image processing and analysis into the unified framework to understand both IOT and computer vision applications This book will be an ideal resource for IT professionals, researchers, under- or post-graduate students, practitioners, and technology developers who are interested in gaining a deeper knowledge in implementing IoT with visual surveillance, critical applications domains, technologies, and solutions to handle relevant challenges. Dr. Lavanya Sharma is an Assistant Professor in the Amity Institute of Information Technology at Amity University UP, Noida, India. She is a recipient of several prestigious awards during her academic career. She is an active nationally-recognized researcher who has published numerous papers in her field. She has contributed as an Organizing Committee member and session chair at Springer and IEEE conferences. Prof. Pradeep K. Garg worked as a Vice Chancellor, Uttarakhand Technical University, Dehradun. Presently he is working in the department of Civil Engineering, IIT Roorkee as a professor. Prof. Garg has published more than 300 technical papers in national and international conferences and journals. He has completed 26 research projects funded by various government agencies, guided 27 PhD candidates, and provided technical services to 84 consultancy projects on various aspects of Civil Engineering.

New Trends in Image Analysis and Processing -- ICIAP 2015 Workshops - Vittorio Murino 2015-08-20

This book constitutes the refereed proceedings of seven workshops held at the 18th International Conference on Image Analysis and Processing, ICIAP 2015, in Genoa, Italy, in September 2015: International Workshop on Recent Advances

in Digital Security: Biometrics and Forensics, BioFor 2015; International Workshop on Color in Texture and Material Recognition, CTMR 2015; International Workshop on Medical Imaging in Rheumatology: Advanced applications for the analysis of in ammation and damage in the rheumatoid Joint, RHEUMA 2015; International Workshop on Image-Based Smart City Application, ISCA 2015; International Workshop on Multimedia Assisted Dietary Management, MADiMa 2015; International Workshop on Scene Background Modeling and initialization, SBMI 2015; and International Workshop on Image and Video Processing for Quality of Multimedia Experience, QoEM 2015.

Handbook of Robust Low-Rank and Sparse Matrix Decomposition - Thierry Bouwmans 2016-09-20

Handbook of Robust Low-Rank and Sparse Matrix Decomposition: Applications in Image and Video Processing shows you how robust subspace learning and tracking by decomposition into low-rank and sparse matrices provide a suitable framework for computer vision applications. Incorporating both existing and new ideas, the book conveniently gives you one-stop access to a number of different decompositions, algorithms, implementations, and benchmarking techniques. Divided into five parts, the book begins with an overall introduction to robust principal component analysis (PCA) via decomposition into low-rank and sparse matrices. The second part addresses robust matrix factorization/completion problems while the third part focuses on robust online subspace estimation, learning, and tracking. Covering applications in image and video processing, the fourth part discusses image analysis, image denoising, motion saliency detection, video coding, key frame extraction, and hyperspectral video processing. The final part presents resources and applications in background/foreground

separation for video surveillance. With contributions from leading teams around the world, this handbook provides a complete overview of the concepts, theories, algorithms, and applications related to robust low-rank and sparse matrix decompositions. It is designed for researchers, developers, and graduate students in computer vision, image and video processing, real-time architecture, machine learning, and data mining.

Moving Object Detection Using Background Subtraction Algorithms - Priyank Shah 2014-06-16 Master's Thesis from the year 2014 in the subject Computer Science - Theory, grade: 9.2, , language: English, abstract: In this thesis we present an operational computer video system for moving object detection and tracking . The system captures monocular frames of background as well as moving object and to detect tracking and identifies those moving objects. An approach to statistically modeling of moving object developed using Background Subtraction Algorithms. There are many methods proposed for Background Subtraction algorithm in past years. Background subtraction algorithm is widely used for real time moving object detection in video surveillance system. In this paper we have studied and implemented different types of methods used for segmentation in Background subtraction algorithm with static camera. This paper gives good understanding about procedure to obtain foreground using existing common methods of Background Subtraction, their complexity, utility and also provide basics which will useful to improve performance in the future . First, we have explained the basic steps and procedure used in vision based moving object detection. Then, we have debriefed the common methods of background subtraction like Simple method, statistical methods like Mean and Median filter, Frame Differencing and W4

System method , Running Gaussian Average and Gaussian Mixture Model and last is Eigenbackground Model. After that we have implemented all the above techniques on MATLAB software and show some experimental results for the same and compare them in terms of speed and complexity criteria. Also we have improved one of the GMM algorithm by combining it with optical flow method, which is also good method to detect moving elements.

Computer Vision and Internet of Things - Lavanya Sharma 2022-05-20

Computer Vision and Internet of Things: Technologies and Applications explores the utilization of Internet of Things (IoT) with computer vision and its underlying technologies in different applications areas. Using a series of present and future applications – including business insights, indoor-outdoor securities, smart grids, human detection and tracking, intelligent traffic monitoring, e-health departments, and medical imaging – this book focuses on providing a detailed description of the utilization of IoT with computer vision and its underlying technologies in critical application areas, such as smart grids, emergency departments, intelligent traffic cams, insurance, and the automotive industry. Key Features • Covers the challenging issues related to sensors, detection, and tracking of moving objects with solutions to handle relevant challenges • Describes the latest technological advances in IoT and computer vision with their implementations • Combines image processing and analysis into a unified framework to understand both IOT and computer vision applications • Explores mining and tracking of motion-based object data, such as trajectory prediction and prediction of a particular location of object data, and their critical applications • Provides novel solutions for medical imaging (skin lesion detection, cancer detection, enhancement techniques for MRI images,

and automated disease prediction) This book is primarily aimed at graduates and researchers working in the areas of IoT, computer vision, big data, cloud computing, and remote sensing. It is also an ideal resource for IT professionals and technology developers.

Machine Learning and Data Mining in Pattern Recognition - Petra Perner 2018-07-09

This two-volume set LNAI 10934 and LNAI 10935 constitutes the refereed proceedings of the 14th International Conference on Machine Learning and Data Mining in Pattern Recognition, MLDM 2018, held in New York, NY, USA in July 2018. The 92 regular papers presented in this two-volume set were carefully reviewed and selected from 298 submissions. The topics range from theoretical topics for classification, clustering, association rule and pattern mining to specific data mining methods for the different multi-media data types such as image mining, text mining, video mining, and Web mining.

Video Surveillance for Sensor Platforms - Mayssaa Al Najjar 2013-10-22

This book introduces resource aware image decomposition, registration, fusion, object detection and tracking algorithms along with their applications in security, monitoring and integration in 3rd Generation Surveillance Systems. All algorithms are evaluated through experimental and simulation results and a parallel and pipelined efficient architecture for implementing the algorithms is described.

2019 3rd International Conference on Computing Methodologies and Communication (ICCMC) - IEEE Staff 2019-03-27

Computing Methodologies 2019 will provide an outstanding international forum for scientists from all over the world to share ideas and achievements in the theory and practice of all areas of inventive systems which includes artificial intelligence, automation systems, computing

systems, electronics systems, electrical and informative systems etc Presentations should highlight computing methodologies as a concept that combines theoretical research and applications in automation, information and computing technologies All aspects of inventive systems are of interest theory, algorithms, tools, applications, etc

Advances in Artificial Intelligence - Oscar Luaces 2016-09-07

This book constitutes the refereed proceedings of the 16th Conference of the Spanish Association for Artificial Intelligence, CAEPIA 2016, held in Salamanca, Spain, in September 2016. The 47 revised full papers presented were carefully selected from 166 submissions. Apart from the presentation of technical full papers, the scientific program of CAEPIA 2016 included an App contest, a Doctoral Consortium and, as a follow-up to the success achieved in previously CAEPIA editions, a special session on outstanding recent papers (Key Works) already published in renowned journals or forums.

Recent Innovations in Computing - Pradeep Kumar Singh 2022

This book features selected papers presented at the 4th International Conference on Recent Innovations in Computing (ICRIC 2021), held on May 8-9, 2021, at the Central University of Jammu, India, and organized by the university's Department of Computer Science and Information Technology. The book is divided into two volumes, and it includes the latest research in the areas of software engineering, cloud computing, computer networks and Internet technologies, artificial intelligence, information security, database and distributed computing, and digital India.

Moving Object Detection Using Background Subtraction - Soharab Hossain Shaikh 2014-06-20

This Springer Brief presents a comprehensive survey of the existing methodologies of

background subtraction methods. It presents a framework for quantitative performance evaluation of different approaches and summarizes the public databases available for research purposes. This well-known methodology has applications in moving object detection from video captured with a stationery camera, separating foreground and background objects and object classification and recognition. The authors identify common challenges faced by researchers including gradual or sudden illumination change, dynamic backgrounds and shadow and ghost regions. This brief concludes with predictions on the future scope of the methods. Clear and concise, this brief equips readers to determine the most effective background subtraction method for a particular project. It is a useful resource for professionals and researchers working in this field.

Handbook Of Pattern Recognition And Computer Vision (2nd Edition) - Chi Hau Chen 1999-03-12

The very significant advances in computer vision and pattern recognition and their applications in the last few years reflect the strong and growing interest in the field as well as the many opportunities and challenges it offers. The second edition of this handbook represents both the latest progress and updated knowledge in this dynamic field. The applications and technological issues are particularly emphasized in this edition to reflect the wide applicability of the field in many practical problems. To keep the book in a single volume, it is not possible to retain all chapters of the first edition. However, the chapters of both editions are well written for permanent reference. This indispensable handbook will continue to serve as an authoritative and comprehensive guide in the field.

Machine Learning and Data Mining in Pattern Recognition - Petra Perner 2018-07-09

This two-volume set LNAI 10934 and LNAI 10935 constitutes the refereed proceedings of the 14th International Conference on Machine Learning and Data Mining in Pattern Recognition, MLDM 2018, held in New York, NY, USA in July 2018. The 92 regular papers presented in this two-volume set were carefully reviewed and selected from 298 submissions. The topics range from theoretical topics for classification, clustering, association rule and pattern mining to specific data mining methods for the different multi-media data types such as image mining, text mining, video mining, and Web mining.

Performance Evaluation Software - Bahadir Karasulu 2013-03-25

Performance Evaluation Software: Moving Object Detection and Tracking in Videos introduces a software approach for the real-time evaluation and performance comparison of the methods specializing in moving object detection and/or tracking (D&T) in video processing. Digital video content analysis is an important item for multimedia content-based indexing (MCBI), content-based video retrieval (CBVR) and visual surveillance systems. There are some frequently-used generic algorithms for video object D&T in the literature, such as Background Subtraction (BS), Continuously Adaptive Mean-shift (CMS), Optical Flow (OF), etc. An important problem for performance evaluation is the absence of any stable and flexible software for comparison of different algorithms. In this frame, we have designed and implemented the software for comparing and evaluating the well-known video object D&T algorithms on the same platform. This software is able to compare them with the same metrics in real-time and on the same platform. It also works as an automatic and/or semi-automatic test environment in real-time, which uses the image and video processing essentials, e.g. morphological

operations and filters, and ground-truth (GT) XML data files, charting/plotting capabilities, etc. Along with the comprehensive literature survey of the abovementioned video object D&T algorithms, this book also covers the technical details of our performance benchmark software as well as a case study on people D&T for the functionality of the software.

Handbook on Soft Computing for Video Surveillance - Sankar K. Pal 2012-01-25

Information on integrating soft computing techniques into video surveillance is widely scattered among conference papers, journal articles, and books. Bringing this research together in one source, Handbook on Soft Computing for Video Surveillance illustrates the application of soft computing techniques to different tasks in video surveillance. Worldwide experts in the field present novel solutions to video surveillance problems and discuss future trends. After an introduction to video surveillance systems and soft computing tools, the book gives examples of neural network-based approaches for solving video surveillance tasks and describes summarization techniques for content identification. Covering a broad spectrum of video surveillance topics, the remaining chapters explain how soft computing techniques are used to detect moving objects, track objects, and classify and recognize target objects. The book also explores advanced surveillance systems under development. Incorporating both existing and new ideas, this handbook unifies the basic concepts, theories, algorithms, and applications of soft computing. It demonstrates why and how soft computing methodologies can be used in various video surveillance problems.

Robust Motion Detection in Real-Life Scenarios - Ester Martínez-Martín 2012-07-10

This work proposes a complete sensor-independent visual system that provides robust target motion detection. First,

the way sensors obtain images, in terms of resolution distribution and pixel neighbourhood, is studied. This allows a spatial analysis of motion to be carried out. Then, a novel background maintenance approach for robust target motion detection is implemented. Two different situations are considered: a fixed camera observing a constant background where objects are moving; and a still camera observing objects in movement within a dynamic background. This distinction lies on developing a surveillance mechanism without the constraint of observing a scene free of foreground elements for several seconds when a reliable initial background model is obtained, as that situation cannot be guaranteed when a robotic system works in an unknown environment. Other problems are also addressed to successfully deal with changes in illumination, and the distinction between foreground and background elements.

Computer Vision Using Local Binary Patterns - Matti Pietikäinen 2011-06-21

The recent emergence of Local Binary Patterns (LBP) has led to significant progress in applying texture methods to various computer vision problems and applications. The focus of this research has broadened from 2D textures to 3D textures and spatiotemporal (dynamic) textures. Also, where texture was once utilized for applications such as remote sensing, industrial inspection and biomedical image analysis, the introduction of LBP-based approaches have provided outstanding results in problems relating to face and activity analysis, with future scope for face and facial expression recognition, biometrics, visual surveillance and video analysis. Computer Vision Using Local Binary Patterns provides a detailed description of the LBP methods and their variants both in spatial and spatiotemporal domains. This comprehensive reference also provides an excellent overview as to how texture methods can be utilized for solving different

kinds of computer vision and image analysis problems. Source codes of the basic LBP algorithms, demonstrations, some databases and a comprehensive LBP bibliography can be found from an accompanying web site. Topics include: local binary patterns and their variants in spatial and spatiotemporal domains, texture classification and segmentation, description of interest regions, applications in image retrieval and 3D recognition - Recognition and segmentation of dynamic textures, background subtraction, recognition of actions, face analysis using still images and image sequences, visual speech recognition and LBP in various applications. Written by pioneers of LBP, this book is an essential resource for researchers, professional engineers and graduate students in computer vision, image analysis and pattern recognition. The book will also be of interest to all those who work with specific applications of machine vision.

Background Modeling and Foreground Detection for Video Surveillance - Thierry Bouwmans 2014-07-25 Background modeling and foreground detection are important steps in video processing used to detect robustly moving objects in challenging environments. This requires effective methods for dealing with dynamic backgrounds and illumination changes as well as algorithms that must meet real-time and low memory requirements. Incorporating both established and new ideas, Background Modeling and Foreground Detection for Video Surveillance provides a complete overview of the concepts, algorithms, and applications related to background modeling and foreground detection. Leaders in the field address a wide range of challenges, including camera jitter and background subtraction. The book presents the top methods and algorithms for detecting moving objects in video surveillance. It covers statistical models, clustering

models, neural networks, and fuzzy models. It also addresses sensors, hardware, and implementation issues and discusses the resources and datasets required for evaluating and comparing background subtraction algorithms. The datasets and codes used in the text, along with links to software demonstrations, are available on the book's website. A one-stop resource on up-to-date models, algorithms, implementations, and benchmarking techniques, this book helps researchers and industry developers understand how to apply background models and foreground detection methods to video surveillance and related areas, such as optical motion capture, multimedia applications, teleconferencing, video editing, and human–computer interfaces. It can also be used in graduate courses on computer vision, image processing, real-time architecture, machine learning, or data mining.

Background Subtraction - Ahmed Elgammal 2014-12-01

Background subtraction is a widely used concept for detection of moving objects in videos. In the last two decades there has been a lot of development in designing algorithms for background subtraction, as well as wide use of these algorithms in various important applications, such as visual surveillance, sports video analysis, motion capture, etc. Various statistical approaches have been proposed to model scene backgrounds. The concept of background subtraction also has been extended to detect objects from videos captured from moving cameras. This book reviews the concept and practice of background subtraction. We discuss several traditional statistical background subtraction models, including the widely used parametric Gaussian mixture models and non-parametric models. We also discuss the issue of shadow suppression, which is essential for human motion analysis applications. This book

discusses approaches and tradeoffs for background maintenance. This book also reviews many of the recent developments in background subtraction paradigm. Recent advances in developing algorithms for background subtraction from moving cameras are described, including motion-compensation-based approaches and motion-segmentation-based approaches.

Smart Multimedia - Troy McDaniel 2020-07-31

This book constitutes the proceedings of the Second International Conference on Smart Multimedia, ICSM 2019, which was held in San Diego, CA, USA, in December 2019. The 45 papers presented were selected from about 100 submissions and are grouped in sections on 3D mesh and depth image processing; image understanding; miscellaneous; smart multimedia for citizen-centered smart living; 3D perception and applications; video applications; multimedia in medicine; haptics and applications; smart multimedia beyond the visible spectrum; machine learning for multimedia; image segmentation and processing; biometrics; 3D and image processing; and smart social and connected household products.

Novel Algorithms and Techniques in Telecommunications, Automation and Industrial Electronics - Tarek Sobh 2008-08-15

Novel Algorithms and Techniques in Telecommunications, Automation and Industrial Electronics includes a set of rigorously reviewed world-class manuscripts addressing and detailing state-of-the-art research projects in the areas of Industrial Electronics, Technology and Automation, Telecommunications and Networking. Novel Algorithms and Techniques in Telecommunications, Automation and Industrial Electronics includes selected papers form the conference proceedings of the

International Conference on Industrial Electronics, Technology and Automation (IETA 2007) and International Conference on Telecommunications and Networking (TeNe 07) which were part of the International Joint Conferences on Computer, Information and Systems Sciences and Engineering (CISSE 2007).

ICICCT 2019 – System Reliability, Quality Control, Safety, Maintenance and Management - Vinit Kumar Gunjan 2019-06-27

This book discusses reliability applications for power systems, renewable energy and smart grids and highlights trends in reliable communication, fault-tolerant systems, VLSI system design and embedded systems. Further, it includes chapters on software reliability and other computer engineering and software management-related disciplines, and also examines areas such as big data analytics and ubiquitous computing. Outlining novel, innovative concepts in applied areas of reliability in electrical, electronics and computer engineering disciplines, it is a valuable resource for researchers and practitioners of reliability theory in circuit-based engineering domains.

Fuzzy Logic and Applications - Francesco Masulli 2013-11-08

This book constitutes the proceedings of the 10th International Workshop on Fuzzy Logic and Applications, WILF 2013, held in Genoa, Italy, in November 2013. After a rigorous peer-review selection process, ultimately 19 regular papers were selected for inclusion in this volume from 29 submissions. In addition the book contains 3 keynote talks and 2 tutorials. The papers are organized in topical sections named: fuzzy machine learning and interpretability; theory and applications.

Towards Smart World - Lavanya Sharma 2020-12-13

Towards Smart World: Homes to Cities Using Internet of Things provides an overview of basic concepts from the rising of machines and

communication to IoT for making cities smart, real-time applications domains, related technologies, and their possible solutions for handling relevant challenges. This book highlights the utilization of IoT for making cities smart and its underlying technologies in real-time application areas such as emergency departments, intelligent traffic systems, indoor and outdoor securities, automotive industries, environmental monitoring, business entrepreneurship, facial recognition, and motion-based object detection. Features The book covers the challenging issues related to sensors, detection, and tracking of moving objects, and solutions to handle relevant challenges. It contains the most recent research analysis in the domain of communications, signal processing, and computing sciences for facilitating smart homes, buildings, environmental conditions, and cities. It presents the readers with practical approaches and future direction for using IoT in smart cities and discusses how it deals with human dynamics, the ecosystem, and social objects and their relation. It describes the latest technological advances in IoT and visual surveillance with their implementations. This book is an ideal resource for IT professionals, researchers, undergraduate or postgraduate students, practitioners, and technology developers who are interested in gaining deeper knowledge and implementing IoT for smart cities, real-time applications areas, and technologies, and a possible set of solutions to handle relevant challenges. Dr. Lavanya Sharma is an Assistant Professor in the Amity Institute of Information Technology at Amity University UP, Noida, India. She has been a recipient of several prestigious awards during her academic career. She is an active nationally recognized researcher who has published numerous papers in her field.

Computer Vision -- ACCV 2012 - Kyoung Mu Lee 2013-03-27

The four-volume set LNCS 7724--7727 constitutes the thoroughly refereed post-conference proceedings of the 11th Asian Conference on Computer Vision, ACCV 2012, held in Daejeon, Korea, in November 2012. The total of 226 contributions presented in these volumes was carefully reviewed and selected from 869 submissions. The papers are organized in topical sections on object detection, learning and matching; object recognition; feature, representation, and recognition; segmentation, grouping, and classification; image representation; image and video retrieval and medical image analysis; face and gesture analysis and recognition; optical flow and tracking; motion, tracking, and computational photography; video analysis and action recognition; shape reconstruction and optimization; shape from X and photometry; applications of computer vision; low-level vision and applications of computer vision.

Advances in Visual Computing - George Bebis 2008-11-13

The two volume set LNCS 5358 and LNCS 5359 constitutes the refereed proceedings of the 4th International Symposium on Visual Computing, ISVC 2008, held in Las Vegas, NV, USA, in December 2008. The 102 revised full papers and 70 poster papers presented together with 56 full and 8 poster papers of 8 special tracks were carefully reviewed and selected from more than 340 submissions. The papers are organized in topical sections on computer graphics, visualization, shape/recognition, video analysis and event recognition, virtual reality, reconstruction, motion, face/gesture, and computer vision applications. The 8 additional special tracks address issues such as object recognition, real-time vision algorithm implementation and application, computational bioimaging and visualization, discrete and computational geometry, soft computing in image processing and

computer vision, visualization and simulation on immersive display devices, analysis and visualization of biomedical visual data, as well as image analysis for remote sensing data.

Computer Vision for Visual Effects - Richard J. Radke 2013

This book explores the fundamental computer vision principles and state-of-the-art algorithms used to create cutting-edge visual effects for movies and television. It describes classical computer vision algorithms and recent developments, features more than 200 original images, and contains in-depth interviews with Hollywood visual effects artists that tie the mathematical concepts to real-world filmmaking.

Proceedings of the International Conference on Data Engineering and Communication Technology - Suresh Chandra Satapathy 2016-08-24

This two-volume book contains research work presented at the First International Conference on Data Engineering and Communication Technology (ICDECT) held during March 10–11, 2016 at Lavasa, Pune, Maharashtra, India. The book discusses recent research technologies and applications in the field of Computer Science, Electrical and Electronics Engineering. The aim of the Proceedings is to provide cutting-edge developments taking place in the field data engineering and communication technologies which will assist the researchers and practitioners from both academia as well as industry to advance their field of study.

A New Algorithm for Improving Basic Model Based Foreground Detection Using Neutrosophic Similarity Score - Keli Hu

Foreground detection is a task for detecting the moving objects in the scene like in video surveillance. Several basic background models are often used due to their high efficiency. However, their results are not good when there exists noisy information

generated by the bad weather, camera jitter, etc.
Neutrosophic set (NS) is as a new branch of philosophy dealing with the origin, nature and scope of neutralities. It has an inherent ability to handle the indeterminant information like the noise included in images and video sequences.

Optimal Foreground Detection Methods for Pixel Domain Video Objects - Devi K Suganya 2015-03-31
This Book discusses different approaches for extracting or detecting the foreground video objects in a pixel domain. To tackle with the problems related with existing approaches this book gives a solution by applying the following methods sequentially thereby to improve the efficiency. First, extraction of superpixel from a video frame to reduce the number of comparisons. Second, applying the background subtraction algorithm (Gaussian background Modeling) and optical flow on those superpixels extracted from each frame of the video. This is done to detect the edges of objects in the video clearly and finally by using the SMED (Separable Morphological Edge Detector) the foreground object is segmented from background scene accurately

The 10th International Conference on Computer Engineering and Networks - Qi Liu 2020-10-05
This book contains a collection of the papers accepted by the CENet2020 – the 10th International Conference on Computer Engineering and Networks held on October 16-18, 2020 in Xi’an, China. The topics focus but are not limited to Internet of Things and Smart Systems, Artificial Intelligence and Applications, Communication System Detection, Analysis and Application, and Medical Engineering and Information Systems. Each part can be used as an excellent reference by industry practitioners, university faculties, research fellows and undergraduates as well as graduate students who need to build a knowledge base of the most current advances

and state-of-practice in the topics covered by this conference proceedings. This will enable them to produce, maintain, and manage systems with high levels of trustworthiness and complexity.

Background Modeling and Foreground Detection for Video Surveillance - Thierry Bouwmans 2014-07-25

Background modeling and foreground detection are important steps in video processing used to detect robustly moving objects in challenging environments. This requires effective methods for dealing with dynamic backgrounds and illumination changes as well as algorithms that must meet real-time and low memory requirements. Incorporating both established and new ideas, Background Modeling and Foreground Detection for Video Surveillance provides a complete overview of the concepts, algorithms, and applications related to background modeling and foreground detection. Leaders in the field address a wide range of challenges, including camera jitter and background subtraction. The book presents the top methods and algorithms for detecting moving objects in video surveillance. It covers statistical models, clustering models, neural networks, and fuzzy models. It also addresses sensors, hardware, and implementation issues and discusses the resources and datasets required for evaluating and comparing background subtraction algorithms. The datasets and codes used in the text, along with links to software demonstrations, are available on the book's website. A one-stop resource on up-to-date models, algorithms, implementations, and benchmarking techniques, this book helps researchers and industry developers understand how to apply background models and foreground detection methods to video surveillance and related areas, such as optical motion capture, multimedia applications,

teleconferencing, video editing, and human–computer interfaces. It can also be used in graduate courses on computer vision, image processing, real-time architecture, machine learning, or data mining.

AI 2013: Advances in Artificial Intelligence - Stephen Cranefield 2013-11-08

This book constitutes the refereed proceedings of the 26th Australasian Joint Conference on Artificial Intelligence, AI 2013, held in Dunedin, New Zealand, in December 2013. The 35 revised full papers and 19 revised short papers presented were carefully reviewed and selected from 120 submissions. The papers are organized in topical sections as agents; AI applications; cognitive modelling; computer vision; constraint satisfaction, search and optimisation; evolutionary computation; game playing; knowledge representation and reasoning; machine learning and data mining; natural language processing and information retrieval; planning and scheduling.