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Temporal Video Segmentation
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Handbook of Research on Machine Learning Innovations and Trends
The Art of Digital Video
Fast and Accurate Camera Motion Estimation For Static and Dynamic Scenes
Measurement Technology for Micro-Nanometer Devices
Handbook of Image and Video Processing
Signal Processing for Multimedia
Motion Vision
Broadcast Engineer's Reference Book
Design of Digital Video Coding Systems

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An image or video sequence is a series of two-dimensional (2-D) images sequentially ordered in time. Image sequences can be acquired, for instance, by video, motion picture, X-ray, or acoustic cameras, or they can be synthetically generated by sequentially ordering 2-D still images as in computer graphics and animation. The use of image sequences in areas such as entertainment, visual communications, multimedia, education, medicine, surveillance, remote control, and scientific research is constantly growing as the use of television and video systems are becoming more and more common. The boosted interest in digital video for both consumer and professional products, along with the availability of fast processors and memory at reasonable costs, has been a major driving force behind this growth. Before we elaborate on the two major terms that appear in the title of this book, namely motion analysis and image sequence processing, we like to place them in their proper contexts within the range of possible operations that involve image sequences. In this book, we choose to classify these operations into three major categories, namely (i) image sequence processing, (ii) image sequence analysis, and (iii) visualization. The interrelationship among these three categories is pictorially described in Figure 1 below in the form of an "image sequence triangle".

Disaster Intelligent Perception and Emergency Command of Power Grid Springer

This open access book addresses the current technical problems of low efficiency of emergency site information collection, lack of flexibility of emergency information interaction, lack of fusion analysis technology and disaster loss prediction model, and low intelligence of emergency auxiliary decision making. The content contains research on multiple information collection technology of power grid disaster loss, fusion analysis and prediction technology of power grid disaster loss information, and real-time information interaction technology between emergency site and command

center in this work. This book illustrates the process of developing a prototype system for grid disaster perception and emergency command, which realizes the functions of grid disaster perception and emergency auxiliary decision-making and visualization command. The prototype intelligent perception and emergency command system for power grid disasters has been piloted in several units. It provided support for disaster loss prediction, disaster damage perception, and emergency command auxiliary decision-making in the earthquake in Sichuan, China, as well as the heavy rainfall in Zhejiang, China and Typhoon No. 9 "Lupi" that registered in Fujian, China, which significantly improved the emergency disposal Work efficiency.

Image Analysis and Recognition Academic Press

This book constitutes the thoroughly refereed post-conference proceedings of the 7th Pacific Rim Symposium on Image and Video Technology, PSIVT 2015, held in Auckland, New Zealand, in November 2015. The total of 61 revised papers was carefully reviewed and selected from 133 submissions. The papers are organized in topical sections on color and motion, image/video coding and transmission, computational photography and arts, computer vision and applications, image segmentation and classification, video surveillance, biomedical image processing and analysis, object and pattern recognition, computer vision and pattern recognition, image/video processing and analysis, and pattern recognition.

Algorithm & SoC Design for Automotive Vision Systems Springer

An essential guide to all aspects of video technology for sound technicians wishing to broaden their knowledge. It explains in a highly readable and engaging way, the key technologies and issues, as well as the terms, acronyms and definitions. Although intended for the sound professional, this book will also appeal to anyone involved in working with video. Everything is covered: from how television and video cameras work to digital video recording, electronic news gathering, nonlinear editing, video effects as well as telecine, widescreen technology and the home cinema. The book also takes a look at the impact of digital technology on production methods and examines the technology and rationale behind digital television, High Definition Television,

and DVD. It concludes with the use of video in multimedia and the internet. Based on a series of popular articles in Audio Media magazine, this a vital introductory work for students and professionals wishing to broaden their knowledge of video.

Advances in Image and Video Technology Springer

The two-volume set LNCS 4141, and LNCS 4142 constitutes the refereed proceedings of the Third International Conference on Image Analysis and Recognition, ICIAR 2006. The volumes present 71 revised full papers and 92 revised poster papers together with 2 invited lectures. Volume I includes papers on image restoration and enhancement, image segmentation, image and video processing and analysis, image and video coding and encryption, image retrieval and indexing, and more.

Computational Science and Its Applications - ICCSA 2004 Springer

A discussion of a compressed-domain approach for designing and implementing digital video coding systems, which is drastically different from the traditional hybrid approach. It demonstrates how the combination of discrete cosine transform (DCT) coders and motion compensated (MC) units reduces power consumption and hardware complexity.

Image Analysis and Recognition Springer Science & Business Media

Many computer scientists, engineers, applied mathematicians, and physicists use geometry theory and geometric computing methods in the design of perception-action systems, intelligent autonomous systems, and man-machine interfaces. This handbook brings together the most recent advances in the application of geometric computing for building such systems, with contributions from leading experts in the important fields of neuroscience, neural networks, image processing, pattern recognition, computer vision, uncertainty in geometric computations, conformal computational geometry, computer graphics and visualization, medical imagery, geometry and robotics, and reaching and motion planning. For the first time, the various methods are presented in a comprehensive, unified manner. This handbook is highly recommended for postgraduate students and researchers working on applications such as automated learning; geometric and fuzzy reasoning; human-like

artificial vision; tele-operation; space maneuvering; haptics; rescue robots; man-machine interfaces; tele-immersion; computer- and robotics-aided neurosurgery or orthopedics; the assembly and design of humanoids; and systems for metalevel reasoning.

Handbook of Image Engineering John Wiley & Sons

Image techniques have been developed and implemented for various purposes, and image engineering (IE) is a rapidly evolving, integrated discipline comprising the study of all the different branches of image techniques, and encompassing mathematics, physics, biology, physiology, psychology, electrical engineering, computer science and automation. Advances in the field are also closely related to the development of telecommunications, biomedical engineering, remote sensing, surveying and mapping, as well as document processing and industrial applications. IE involves three related and partially overlapping groups of image techniques: image processing (IP) (in its narrow sense), image analysis (IA) and image understanding (IU), and the integration of these three groups makes the discipline of image engineering an important part of the modern information era. This is the first handbook on image engineering, and provides a well-structured, comprehensive overview of this new discipline. It also offers detailed information on the various image techniques. It is a valuable reference resource for R&D professional and undergraduate students involved in image-related activities.

Advances in Electrical Engineering and Electrical Machines
Springer Science & Business Media

A fully comprehensive examination of state-of-the-art technologies for measurement at the small scale • Highlights the advanced research work from industry and academia in micro-nano devices test technology • Written at both introductory and advanced levels, provides the fundamentals and theories • Focuses on the measurement techniques for characterizing MEMS/NEMS devices

Priors and Learning Based Methods for Super-resolution IET

The fields of computer vision and image processing are constantly evolving as new research and applications in these areas emerge. Staying abreast of the most up-to-date developments in this field is necessary in order to promote further research and apply these developments in real-world settings. Computer Vision: Concepts,

Methodologies, Tools, and Applications is an innovative reference source for the latest academic material on development of computers for gaining understanding about videos and digital images. Highlighting a range of topics, such as computational models, machine learning, and image processing, this multi-volume book is ideally designed for academicians, technology professionals, students, and researchers interested in uncovering the latest innovations in the field.

Motion Analysis and Image Sequence Processing Springer Science & Business Media

Focusing on the most rapidly changing areas of mechatronics, this book discusses signals and system control, mechatronic products, metrology and nanometrology, automatic control & robotics, biomedical engineering, photonics, design manufacturing and testing of MEMS. It is reflected in the list of contributors, including an international group of 302 leading researchers representing 12 countries. The book is intended for use in academic, government and industry R&D departments, as an indispensable reference tool for the years to come. This volume can serve a global community as the definitive reference source in Mechatronics. The book comprises carefully selected 93 contributions presented at the 11th International Conference Mechatronics 2015, organized by Faculty of Mechatronics, Warsaw University of Technology, on September 21-23, in Warsaw, Poland.

Sound Person's Guide to Video Taylor & Francis

ICIAR 2005, the International Conference on Image Analysis and Recognition, was the second ICIAR conference, and was held in Toronto, Canada. ICIAR is organized annually, and alternates between Europe and North America. ICIAR 2004 was held in Porto, Portugal. The idea of offering these conferences came as a result of discussion between researchers in Portugal and Canada to encourage collaboration and exchange, mainly between these two countries, but also with the open participation of other countries, addressing recent advances in theory, methodology and applications.

The response to the call for papers for ICIAR 2005 was encouraging. From 295 full papers submitted, 153 were finally accepted (80 oral presentations, and 73 posters). The review process was carried out by the Program Committee members and other reviewers; all are experts in various image analysis and recognition areas. Each paper was reviewed by at least two

reviewers, and also checked by the conference co-chairs. The high quality of the papers in these proceedings is attributed first to the authors, and second to the quality of the reviews provided by the experts. We would like to thank the authors for responding to our call, and we wholeheartedly thank the reviewers for their excellent work, and for their timely response. It is this collective effort that resulted in the strong conference program and high-quality proceedings in your hands.

Digital Document Processing IOS Press

Continuous improvements in technological applications have allowed more opportunities to develop automated systems. This not only leads to higher success in smart data analysis, but it increases the overall probability of technological progression. The Handbook of Research on Machine Learning Innovations and Trends is a key resource on the latest advances and research regarding the vast range of advanced systems and applications involved in machine intelligence. Highlighting multidisciplinary studies on decision theory, intelligent search, and multi-agent systems, this publication is an ideal reference source for professionals and researchers working in the field of machine learning and its applications.

Pattern Recognition Springer Nature

Data registration refers to a series of techniques for matching or bringing similar objects or datasets together into alignment. These techniques enjoy widespread use in a diverse variety of applications, such as video coding, tracking, object and face detection and recognition, surveillance and satellite imaging, medical image analysis and structure from motion. Registration methods are as numerous as their manifold uses, from pixel level and block or feature based methods to Fourier domain methods. This book is focused on providing algorithms and image and video techniques for registration and quality performance metrics. The authors provide various assessment metrics for measuring registration quality alongside analyses of registration techniques, introducing and explaining both familiar and state-of-the-art registration methodologies used in a variety of targeted applications. Key features: Provides a state-of-the-art review of image and video registration techniques, allowing readers to develop an understanding of how well the techniques perform by using specific quality assessment criteria Addresses a range of applications from familiar image and video processing domains to

satellite and medical imaging among others, enabling readers to discover novel methodologies with utility in their own research. Discusses quality evaluation metrics for each application domain with an interdisciplinary approach from different research perspectives.

The MPEG Handbook Academic Press

This fifth volume, edited and authored by world leading experts, gives a review of the principles, methods and techniques of important and emerging research topics and technologies in image and video compression and multimedia. With this reference source you will: Quickly grasp a new area of research. Understand the underlying principles of a topic and its application. Ascertain how a topic relates to other areas and learn of the research issues yet to be resolved. Quick tutorial reviews of important and emerging topics of research in Image and Video Compression and Multimedia. Comprehensive references to journal articles and other literature on which to build further, more specific and detailed knowledge. Edited by leading people in the field who, through their reputation, have been able to commission experts to write on a particular topic.

Convergence and Hybrid Information Technology World Scientific. The industry "bible" is back and it's better than ever. The Art of Digital Video has served as the ultimate reference guide for those working with digital video for generations. Now this classic has been revised and re-written by international consultant and industry leader John Watkinson to include important technical updates on this ever-evolving topic. The format has also been improved to include optional sections that provide additional information that you can choose to skip or investigate further, depending on your interests and comfort level with the subject. As the worlds of film, digital imaging, and computing have converged, this book has evolved to remain current and relevant, while still remaining the classic that experts in the field have

trusted for years.

Image and Video Technology Springer Nature

This book constitutes the thoroughly refereed post-conference proceedings of six international workshops held in the framework of the 7th Pacific-Rim Symposium on Image and Video Technology, PSIVT 2015, during November 23-24, 2015, in Auckland, New Zealand. The 29 revised full papers presented were carefully selected from 58 submissions. Their topics diversely ranged from well-established areas to novel current trends: robot vision, RV 2015; 2D and 3D geometric properties from incomplete data, GPID 2015; vision meets graphics, VG 2015; passive and active electro-optical sensors for aerial and space imaging, EO4AS 2015; mathematical and computational methods in biomedical imaging and image analysis, MCBMIA 2015; and video surveillance, VSWS 2015.

Mendel 2015 John Wiley & Sons

The natural mission of Computational Science is to tackle all sorts of human problems and to work out intelligent automata aimed at alleviating the burden of working out suitable tools for solving complex problems. For this reason Computational Science, though originating from the need to solve the most challenging problems in science and engineering (computational science is the key player in the fight to gain fundamental advances in astronomy, biology, chemistry, environmental science, physics and several other scientific and engineering disciplines) is increasingly turning its attention to all fields of human activity. In all activities, in fact, intensive computation, information handling, knowledge synthesis, the use of ad-hoc devices, etc. increasingly need to be exploited and coordinated regardless of the location of both the users and the (various and heterogeneous) computing platforms. As a result the key to understanding the explosive growth of this discipline lies in two adjectives that more and more appropriately refer to Computational Science and its applications: interoperable and

ubiquitous. Numerous examples of ubiquitous and interoperable tools and applications are given in the present four LNCS volumes containing the contributions delivered at the 2004 International Conference on Computational Science and its Applications (ICCSA 2004) held in Assisi, Italy, May 14-17, 2004.

Communicating Pictures Academic Press

Held in Guilin of China from August 13-14, 2016, the 2016 International Conference on Computer Science and Artificial Intelligence (CSAI2016) provides an excellent international platform for all invited speakers, authors and participants to share their results and establish research collaborations for future research. The conference enjoys a wide spread participation. It would not only serve as an academic forum, but also a good opportunity to establish business cooperation. CSAI2016 proceedings collect the most up-to-date, comprehensive, and worldwide state-of-art knowledge on computer science and artificial intelligence. After strict peer-review, the proceedings put together 117 articles based on originality, significance and clarity for the purpose of the conference.

Computer Analysis of Images and Patterns Springer

A complete, professional 'bible' on all aspects of audio and video compression using MPEG technology, including the MPEG-4 standard and, in this second edition, H-264. The clarity of explanation and depth of technical detail combine to make this book an essential and definitive reference work. THE MPEG HANDBOOK is both a theoretical and practical treatment of the subject. Fundamental knowledge is provided alongside practical guidance on how to avoid pitfalls and poor quality. The often-neglected issues of reconstructing the signal timebase at the decoder and of synchronizing the signals in a multiplex are treated fully here. Previously titled MPEG-2, the book is frequently revised to cover the latest applications of the technology.