

## Decision Forests For Computer Vision And Medical Image Analysis Advances In Computer Vision And Pattern Recognition

This book constitutes thoroughly revised and selected papers from the 10th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications, VISIGRAPP 2015, held in Berlin, Germany, in March 2015. VISIGRAPP comprises GRAPP, International Conference on Computer Graphics Theory and Applications; IVAPP, International Conference on Information Visualization Theory and Applications; and VISAPP, International Conference on Computer Vision Theory and Applications. The 23 thoroughly revised and extended papers presented in this volume were carefully reviewed and selected from 529 submissions. The book also contains one invited talk in full-paper length. The regular papers were organized in topical sections named: computer graphics theory and applications; information visualization theory and applications; and computer vision theory and applications.

This proceedings book presents state-of-the-art research innovations in computational vision and bio-inspired techniques. Due to the rapid advances in the emerging information, communication and computing technologies, the Internet of Things, cloud and edge computing, and artificial intelligence play a significant role in the computational vision context. In recent years, computational vision has contributed to enhancing the methods of controlling the operations in biological systems, like ant colony optimization, neural networks, and immune systems. Moreover, the ability of computational vision to process a large number of data streams by implementing new computing paradigms has been demonstrated in numerous studies incorporating computational techniques in the emerging bio-inspired models. The book reveals the theoretical and practical aspects of bio-inspired computing techniques, like machine learning, sensor-based models, evolutionary optimization, and big data modeling and management, that make use of effectual computing processes in the bio-inspired systems. As such it contributes to the novel research that focuses on developing bio-inspired computing solutions for various domains, such as human-computer interaction, image processing, sensor-based single processing, recommender systems, and facial recognition, which play an indispensable part in smart agriculture, smart city, biomedical and business intelligence applications.

This book proposes soft computing techniques for segmenting real-life images in applications such as image processing, image mining, video surveillance, and intelligent transportation systems. The book suggests hybrids deriving from three main approaches: fuzzy systems, primarily used for handling real-life problems that involve uncertainty; artificial neural networks, usually applied for machine cognition, learning, and recognition; and evolutionary computation, mainly used for search, exploration, efficient exploitation of contextual information, and optimization. The contributed chapters discuss both the strengths and the weaknesses of the approaches, and the book will be valuable for researchers and graduate students in the domains of image processing and computational intelligence.

The three-volume set LNCS 8149, 8150, and 8151 constitutes the refereed proceedings of the 16th International Conference on Medical Image Computing and Computer-Assisted Intervention, MICCAI 2013, held in Nagoya, Japan, in September 2013. Based on rigorous peer reviews, the program committee carefully selected 262 revised papers from 789 submissions for presentation in three volumes. The 81 papers included in the third volume have been organized in the following topical sections: image reconstruction and motion modeling; machine learning in medical image computing; imaging, reconstruction, and enhancement; segmentation; physiological modeling, simulation, and planning; intraoperative guidance and robotics; microscope, optical imaging, and histology; diffusion MRI; brain segmentation and atlases; and functional MRI and neuroscience applications.

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.

This book constitutes the thoroughly refereed post-workshop proceedings of the International Workshop on Medical Computer Vision, MCV 2016, and of the International Workshop on Bayesian and Graphical Models for Biomedical Imaging, BAMBI 2016, held in Athens, Greece, in October 2016, held in conjunction with the 19th International Conference on Medical Image Computing and Computer-Assisted Intervention, MICCAI 2016. The 13 papers presented in MCV workshop and the 6 papers presented in BAMBI workshop were carefully reviewed and selected from numerous submissions. The goal of the MCV workshop is to explore the use of "big data" algorithms for harvesting, organizing and learning from large-scale medical imaging data sets and for general-purpose automatic understanding of medical images. The BAMBI workshop aims to highlight the potential of using Bayesian or random field graphical models for advancing research in biomedical image analysis.

The three-volume set LNCS 8673, 8674, and 8675 constitutes the refereed proceedings of the 17th International Conference on Medical Image Computing and Computer-Assisted Intervention, MICCAI 2014, held in Boston, MA, USA, in September 2014. Based on rigorous peer reviews, the program committee carefully selected 253 revised papers from 862 submissions for presentation in three volumes. The 100 papers included in the second volume have been organized in the following topical sections: biophysical modeling and simulation; atlas-based transfer of boundary conditions for biomechanical simulation; temporal and motion modeling; computer-aided diagnosis; pediatric imaging; endoscopy; ultrasound imaging; machine learning; cardiovascular imaging; intervention planning and guidance; and brain.

The sixteen-volume set comprising the LNCS volumes 11205-11220 constitutes the refereed proceedings of the 15th European Conference on Computer Vision, ECCV 2018, held in Munich, Germany, in September 2018. The 776 revised papers presented were carefully reviewed and selected from 2439 submissions. The papers are organized in topical sections on learning for vision; computational photography; human analysis; human sensing; stereo and reconstruction; optimization; matching and recognition; video attention; and poster sessions.

The two volume set LNCS 8887 and 8888 constitutes the refereed proceedings of the 10th International Symposium on Visual Computing, ISVC 2014, held in Las Vegas, NV, USA. The 74 revised full papers and 55 poster papers presented together with 39 special track papers were carefully reviewed and selected from more than 280 submissions. The papers are organized in topical sections: Part I (LNCS 8887) comprises computational bioimaging, computer graphics; motion, tracking, feature extraction and matching, segmentation, visualization, mapping, modeling and surface reconstruction, unmanned autonomous systems, medical imaging, tracking for human activity monitoring, intelligent transportation systems, visual perception and robotic systems. Part II (LNCS 8888) comprises topics such as computational bioimaging , recognition, computer vision, applications, face processing and recognition, virtual reality, and the poster sessions.

The two-volume set of LNCS 11941 and 11942 constitutes the refereed proceedings of the 8th International Conference on Pattern Recognition and Machine Intelligence, PReMI 2019, held in Tezpur, India, in December 2019. The 131 revised full papers presented were carefully reviewed and selected from 341 submissions. They are organized in topical sections named: Pattern Recognition; Machine Learning; Deep Learning; Soft and Evolutionary Computing; Image Processing; Medical Image Processing; Bioinformatics and Biomedical Signal Processing; Information Retrieval; Remote Sensing; Signal and Video Processing; and Smart and Intelligent Sensors.

The seven-volume set comprising LNCS volumes 8689-8695 constitutes the refereed proceedings of the 13th European Conference on Computer Vision, ECCV 2014, held in Zurich, Switzerland, in September 2014. The 363 revised papers presented were carefully reviewed and selected from 1444 submissions. The papers are organized in topical sections on tracking and activity recognition; recognition; learning and inference; structure from motion and feature matching; computational photography and low-level vision; vision; segmentation and saliency; context and 3D scenes; motion and 3D scene analysis; and poster sessions.

This book constitutes the refereed proceedings of the 16th Iberoamerican Congress on Pattern Recognition, CIARP 2011, held in Pucón, Chile, in November 2011. The 81 revised full papers presented together with 3 keynotes were carefully reviewed and selected from numerous submissions. Topics of interest covered are image processing, restoration and segmentation; computer vision; clustering and artificial intelligence; pattern recognition and classification; applications of pattern recognition; and Chilean Workshop on Pattern Recognition.

This book presents an interdisciplinary selection of cutting-edge research on RGB-D based computer vision. Features: discusses the calibration of color and depth cameras, the reduction of noise on depth maps and methods for capturing human performance in 3D; reviews a selection of applications which use RGB-D information to reconstruct human figures, evaluate energy consumption and obtain accurate action classification; presents an approach for 3D object retrieval and for the reconstruction of gas flow from multiple Kinect cameras; describes an RGB-D computer vision system designed to assist the visually impaired and another for smart-environment sensing to assist elderly and disabled people; examines the effective features that characterize static hand poses and introduces a unified framework to enforce both temporal and spatial constraints for hand parsing; proposes a new classifier architecture for real-time hand pose recognition and a novel hand segmentation and gesture recognition system.

The eight-volume set comprising LNCS volumes 9905-9912 constitutes the refereed proceedings of the 14th European Conference on Computer Vision, ECCV 2016, held in Amsterdam, The Netherlands, in October 2016. The 415 revised papers presented were carefully reviewed and selected from 1480 submissions. The papers cover all aspects of computer vision and pattern recognition such as 3D computer vision; computational photography, sensing and display; face and gesture; low-level vision and image processing; motion and tracking; optimization methods; physics-based vision, photometry and shape-from-X; recognition: detection, categorization, indexing, matching; segmentation, grouping and shape representation; statistical methods and learning; video: events, activities and surveillance; applications. They are organized in topical sections on detection, recognition and retrieval; scene understanding; optimization; image and video processing; learning; action activity and tracking; 3D; and 9 poster sessions.

The six-volume set comprising LNCS volumes 6311 until 6313 constitutes the refereed proceedings of the 11th European Conference on Computer Vision, ECCV 2010, held in Heraklion, Crete, Greece, in September 2010. The 325 revised papers presented were carefully reviewed and selected from 1174 submissions. The papers are organized in topical sections on object and scene recognition; segmentation and grouping; face, gesture, biometrics; motion and tracking; statistical models and visual learning; matching, registration, alignment; computational imaging; multi-view geometry; image features; video and event characterization; shape representation and recognition; stereo; reflectance, illumination, color; medical image analysis.

This book constitutes the refereed proceedings of the 36th German Conference on Pattern Recognition, GCPR 2014, held in Münster, Germany, in September 2014. The 58 revised full papers and 8 short papers were carefully reviewed and selected from 153 submissions. The papers are organized in topical sections on variational models for depth and flow, reconstruction, bio-informatics, deep learning and segmentation, feature computation, video interpretation, segmentation and labeling, image processing and analysis, human pose and people tracking, interpolation and inpainting.

This book presents a selection of chapters, written by leading international researchers, related to the automatic analysis of gestures from still images and multi-modal RGB-Depth image sequences. It offers a comprehensive review of vision-based approaches for supervised gesture recognition methods that have been validated by various challenges. Several aspects of gesture recognition are reviewed, including data acquisition from different sources, feature extraction, learning, and recognition of gestures.

This practical and easy-to-follow text explores the theoretical underpinnings of decision forests, organizing the vast existing literature on the field within a new, general-purpose forest model. Topics and

features: with a foreword by Prof. Y. Amit and Prof. D. Geman, recounting their participation in the development of decision forests; introduces a flexible decision forest model, capable of addressing a large and diverse set of image and video analysis tasks; investigates both the theoretical foundations and the practical implementation of decision forests; discusses the use of decision forests for such tasks as classification, regression, density estimation, manifold learning, active learning and semi-supervised classification; includes exercises and experiments throughout the text, with solutions, slides, demo videos and other supplementary material provided at an associated website; provides a free, user-friendly software library, enabling the reader to experiment with forests in a hands-on manner.

This textbook provides an accessible general introduction to the essential topics in computer vision. Classroom-tested programming exercises and review questions are also supplied at the end of each chapter. Features: provides an introduction to the basic notation and mathematical concepts for describing an image and the key concepts for mapping an image into an image; explains the topologic and geometric basics for analysing image regions and distributions of image values and discusses identifying patterns in an image; introduces optic flow for representing dense motion and various topics in sparse motion analysis; describes special approaches for image binarization and segmentation of still images or video frames; examines the basic components of a computer vision system; reviews different techniques for vision-based 3D shape reconstruction; includes a discussion of stereo matchers and the phase-congruency model for image features; presents an introduction into classification and learning.

The six volume set LNCS 11361-11366 constitutes the proceedings of the 14th Asian Conference on Computer Vision, ACCV 2018, held in Perth, Australia, in December 2018. The total of 274 contributions was carefully reviewed and selected from 979 submissions during two rounds of reviewing and improvement. The papers focus on motion and tracking, segmentation and grouping, image-based modeling, deep learning, object recognition object recognition, object detection and categorization, vision and language, video analysis and event recognition, face and gesture analysis, statistical methods and learning, performance evaluation, medical image analysis, document analysis, optimization methods, RGBD and depth camera processing, robotic vision, applications of computer vision.

The three-volume set, consisting of LNCS 9008, 9009, and 9010, contains carefully reviewed and selected papers presented at 15 workshops held in conjunction with the 12th Asian Conference on Computer Vision, ACCV 2014, in Singapore, in November 2014. The 153 full papers presented were selected from numerous submissions. LNCS 9008 contains the papers selected for the Workshop on Human Gait and Action Analysis in the Wild, the Second International Workshop on Big Data in 3D Computer Vision, the Workshop on Deep Learning on Visual Data, the Workshop on Scene Understanding for Autonomous Systems, and the Workshop on Robust Local Descriptors for Computer Vision. LNCS 9009 contains the papers selected for the Workshop on Emerging Topics on Image Restoration and Enhancement, the First International Workshop on Robust Reading, the Second Workshop on User-Centred Computer Vision, the International Workshop on Video Segmentation in Computer Vision, the Workshop: My Car Has Eyes: Intelligent Vehicle with Vision Technology, the Third Workshop on E-Heritage, and the Workshop on Computer Vision for Affective Computing. LNCS 9010 contains the papers selected for the Workshop on Feature and Similarity for Computer Vision, the Third International Workshop on Intelligent Mobile and Egocentric Vision, and the Workshop on Human Identification for Surveillance.

This book applies novel theories to improve algorithms in complex data analysis in various fields, including object detection, remote sensing, data transmission, data fusion, gesture recognition, and medical image processing and analysis. It is intended for Ph.D. students, academics, researchers, and software developers working in the areas of digital video processing and computer vision technologies.

This book deals with medical image analysis methods. In particular, it contains two significant chapters on image segmentation as well as some selected examples of the application of image analysis and processing methods. Despite the significant development of information technology methods used in modern image analysis and processing algorithms, the segmentation process remains open. This is mainly due to intra-patient variability and/or scene diversity. Segmentation is equally difficult in the case of ultrasound imaging and depends on the location of the probe or the contact force. Regardless of the imaging method, segmentation must be tailored for a specific application in almost every case. These types of application areas for various imaging methods are included in this book.

Computer vision is the science and technology of making machines that see. It is concerned with the theory, design and implementation of algorithms that can automatically process visual data to recognize objects, track and recover their shape and spatial layout. The International Computer Vision Summer School - ICVSS was established in 2007 to provide both an objective and clear overview and an in-depth analysis of the state-of-the-art research in Computer Vision. The courses are delivered by world renowned experts in the field, from both academia and industry, and cover both theoretical and practical aspects of real Computer Vision problems. The school is organized every year by University of Cambridge (Computer Vision and Robotics Group) and University of Catania (Image Processing Lab). Different topics are covered each year. A summary of the past Computer Vision Summer Schools can be found at: <http://www.dmi.unict.it/icvss> This edited volume contains a selection of articles covering some of the talks and tutorials held during the last editions of the school. The chapters provide an in-depth overview of challenging areas with key references to the existing literature.

The four-volume set comprising LNCS volumes 5302/5303/5304/5305 constitutes the refereed proceedings of the 10th European Conference on Computer Vision, ECCV 2008, held in Marseille, France, in October 2008. The 243 revised papers presented were carefully reviewed and selected from a total of 871 papers submitted. The four books cover the entire range of current issues in computer vision. The papers are organized in topical sections on recognition, stereo, people and face recognition, object tracking, matching, learning and features, MRFs, segmentation, computational photography and active reconstruction.

This book constitutes the proceedings of the First International Conference on Emerging Trends in Engineering (ICETE), held at University College of Engineering and organised by the Alumni Association, University College of Engineering, Osmania University, in Hyderabad, India on 22–23 March 2019. The proceedings of the ICETE are published in three volumes, covering seven areas: Biomedical, Civil, Computer Science, Electrical & Electronics, Electronics & Communication, Mechanical, and Mining Engineering. The 215 peer-reviewed papers from around the globe present the latest state-of-the-art research, and are useful to postgraduate students, researchers, academics and industry engineers working in the respective fields. Volume 1 presents papers on the theme “Advances in Decision Sciences, Image Processing, Security and Computer Vision – International Conference on Emerging Trends in Engineering (ICETE)”. It includes state-of-the-art technical contributions in the area of biomedical and computer science engineering, discussing sustainable developments in the field, such as instrumentation and innovation, signal and image processing, Internet of Things, cryptography and network security, data mining and machine learning.

The potential of consumer depth cameras extends well beyond entertainment and gaming, to real-world commercial applications. This authoritative text reviews the scope and impact of this rapidly growing field, describing the most promising Kinect-based research activities, discussing significant current challenges, and showcasing exciting

applications. Features: presents contributions from an international selection of preeminent authorities in their fields, from both academic and corporate research; addresses the classic problem of multi-view geometry of how to correlate images from different viewpoints to simultaneously estimate camera poses and world points; examines human pose estimation using video-rate depth images for gaming, motion capture, 3D human body scans, and hand pose recognition for sign language parsing; provides a review of approaches to various recognition problems, including category and instance learning of objects, and human activity recognition; with a Foreword by Dr. Jamie Shotton.

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The brand new edition of IMAGE PROCESSING, ANALYSIS, AND MACHINE VISION is a robust text providing deep and wide coverage of the full range of topics encountered in the field of image processing and machine vision. As a result, it can serve undergraduates, graduates, researchers, and professionals looking for a readable reference. The book's encyclopedic coverage of topics is wide, and it can be used in more than one course (both image processing and machine vision classes). In addition, while advanced mathematics is not needed to understand basic concepts (making this a good choice for undergraduates), rigorous mathematical coverage is included for more advanced readers. It is also distinguished by its easy-to-understand algorithm descriptions of difficult concepts, and a wealth of carefully selected problems and examples. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

The book provides an up-to-date and authoritative treatment of pattern recognition and computer vision, with chapters written by leaders in the field. On the basic methods in pattern recognition and computer vision, topics range from statistical pattern recognition to array grammars to projective geometry to skeletonization, and shape and texture measures. Recognition applications include character recognition and document analysis, detection of digital mammograms, remote sensing image fusion, and analysis of functional magnetic resonance imaging data, etc.

This book presents research trends on computer vision, especially on application of robotics, and on advanced approaches for computer vision (such as omnidirectional vision). Among them, research on RFID technology integrating stereo vision to localize an indoor mobile robot is included in this book. Besides, this book includes many research on omnidirectional vision, and the combination of omnidirectional vision with robotics. This book features representative work on the computer vision, and it puts more focus on robotics vision and omnidirectional vision. The intended audience is anyone who wishes to become familiar with the latest research work on computer vision, especially its applications on robots. The contents of this book allow the reader to know more technical aspects and applications of computer vision. Researchers and instructors will benefit from this book.

The BIRS Workshop "Advances in Interactive Knowledge Discovery and Data Mining in Complex and Big Data Sets" (15w2181), held in July 2015 in Banff, Canada, was dedicated to stimulating a cross-domain integrative machine-learning approach and appraisal of "hot topics" toward tackling the grand challenge of reaching a level of useful and useable computational intelligence with a focus on real-world problems, such as in the health domain. This encompasses learning from prior data, extracting and discovering knowledge, generalizing the results, fighting the curse of dimensionality, and ultimately disentangling the underlying explanatory factors in complex data, i.e., to make sense of data within the context of the application domain. The workshop aimed to contribute advancements in promising novel areas such as at the intersection of machine learning and topological data analysis. History has shown that most often the overlapping areas at intersections of seemingly disparate fields are key for the stimulation of new insights and further advances. This is particularly true for the extremely broad field of machine learning.

This book focuses on the fundamentals and recent advances in RGB-D imaging as well as covering a range of RGB-D applications. The topics covered include: data acquisition, data quality assessment, filling holes, 3D reconstruction, SLAM, multiple depth camera systems, segmentation, object detection, saliency detection, pose estimation, geometric modelling, fall detection, autonomous driving, motor rehabilitation therapy, people counting and cognitive service robots. The availability of cheap RGB-D sensors has led to an explosion over the last five years in the capture and application of colour plus depth data. The addition of depth data to regular RGB images vastly increases the range of applications, and has resulted in a demand for robust and real-time processing of RGB-D data. There remain many technical challenges, and RGB-D image processing is an ongoing research area. This book covers the full state of the art, and consists of a series of chapters by internationally renowned experts in the field. Each chapter is written so as to provide a detailed overview of that topic. RGB-D Image Analysis and Processing will enable both students and professional developers alike to quickly get up to speed with contemporary techniques, and apply RGB-D imaging in their own projects.

Presents a unified, efficient model of random decision forests which can be used in a number of applications such as scene recognition from photographs, object recognition in images, automatic diagnosis from radiological scans and document analysis.

These proceedings collect selected papers from the 7th International Conference on Green Intelligent Transportation System and Safety held in Nanjing on July 1-4, 2016. The selected works, which include state-of-the-art studies, are intended to promote the development of green mobility and intelligent transportation technology to achieve interconnectivity, resource sharing, flexibility and higher efficiency. They offer valuable insights for researchers and engineers in the fields of Transportation Technology and Traffic Engineering, Automotive and Mechanical Engineering, Industrial and System Engineering, and Electrical Engineering.

Machine learning is the study of computer algorithms that improve automatically through experience and by the use of data. It is seen as a part of artificial intelligence. Machine learning algorithms build a model based on sample data, known as "training data", in order to make predictions or decisions without being explicitly programmed to do so. Machine learning algorithms are used in a wide variety of applications, such as in medicine, email filtering, speech recognition, and computer vision, where it is difficult or unfeasible to develop conventional algorithms to perform the needed tasks. If you are someone who learns by playing with the code and editing the data or equations to see what changes, then use those resources along with the book for a deeper understanding. The topics covered in this book are: -An

overview of decision trees and random forests -A manual example of how a human would classify a dataset, compared to how a decision tree would work -How a decision tree works, and why it is prone to overfitting -How decision trees get combined to form a random forest -How to use that random forest to classify data and make predictions -How to determine how many trees to use in a random forest -Just where does the "randomness" come from -Out of Bag Errors & Cross-Validation - how good of a fit did the machine learning algorithm make? -Gini Criteria & Entropy Criteria - how to tell which split on a decision tree is best among many possible choices -And More

Computer vision is the science and technology of making machines that see. It is concerned with the theory, design and implementation of algorithms that can automatically process visual data to recognize objects, track and recover their shape and spatial layout. The International Computer Vision Summer School - ICVSS was established in 2007 to provide both an objective and clear overview and an in-depth analysis of the state-of-the-art research in Computer Vision. The courses are delivered by world renowned experts in the field, from both academia and industry, and cover both theoretical and practical aspects of real Computer Vision problems. The school is organized every year by University of Cambridge (Computer Vision and Robotics Group) and University of Catania (Image Processing Lab). Different topics are covered each year. A summary of the past Computer Vision Summer Schools can be found at: <http://www.dmi.unict.it/icvss> This edited volume contains a selection of articles covering some of the talks and tutorials held during the first two editions of the school on topics such as Recognition, Registration and Reconstruction. The chapters provide an in-depth overview of these challenging areas with key references to the existing literature.

The four-volume set LNCS 8925, 8926, 8927, and 8928 comprises the refereed post-proceedings of the Workshops that took place in conjunction with the 13th European Conference on Computer Vision, ECCV 2014, held in Zurich, Switzerland, in September 2014. The 203 workshop papers were carefully reviewed and selected for inclusion in the proceedings. They were presented at workshops with the following themes: where computer vision meets art; computer vision in vehicle technology; spontaneous facial behavior analysis; consumer depth cameras for computer vision; "chalearn" looking at people: pose, recovery, action/interaction, gesture recognition; video event categorization, tagging and retrieval towards big data; computer vision with local binary pattern variants; visual object tracking challenge; computer vision + ontology applies cross-disciplinary technologies; visual perception of affordance and functional visual primitives for scene analysis; graphical models in computer vision; light fields for computer vision; computer vision for road scene understanding and autonomous driving; soft biometrics; transferring and adapting source knowledge in computer vision; surveillance and re-identification; color and photometry in computer vision; assistive computer vision and robotics; computer vision problems in plant phenotyping; and non-rigid shape analysis and deformable image alignment. Additionally, a panel discussion on video segmentation is included. .

This book constitutes the refereed proceedings of the 8th International Workshop on Machine Learning in Medical Imaging, MLMI 2017, held in conjunction with MICCAI 2017, in Quebec City, QC, Canada, in September 2017. The 44 full papers presented in this volume were carefully reviewed and selected from 63 submissions. The main aim of this workshop is to help advance scientific research within the broad field of machine learning in medical imaging. The workshop focuses on major trends and challenges in this area, and presents works aimed to identify new cutting-edge techniques and their use in medical imaging.

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