

Preface

This book presents novel and advanced topics in Medical Image Processing and Computational Vision in order to solidify knowledge in the related fields and define their key stakeholders.

The twenty-two chapters included in this book were written by invited experts of international recognition and address important issues in Medical Image Processing and Computational Vision, including: 3D Vision, 3D Visualization, Colour Quantisation, Continuum Mechanics, Data Fusion, Data Mining, Face Recognition, GPU Parallelisation, Image Acquisition and Reconstruction, Image and Video Analysis, Image Clustering, Image Registration, Image Restoring, Image Segmentation, Machine Learning, Modelling and Simulation, Object Detection, Object Recognition, Object Tracking, Optical Flow, Pattern Recognition, Pose Estimation, and Texture Analysis.

Different applications are addressed and described throughout the book, comprising: Biomechanical Studies, Bio-structure Modelling and Simulation, Bone Characterization, Cell Tracking, Computer-Aided Diagnosis, Dental Imaging, Face Recognition, Hand Gestures Detection and Recognition, Human Motion Analysis, Human-Computer Interaction, Image and Video Understanding, Image Processing, Image Segmentation, Object and Scene Reconstruction, Object Recognition and Tracking, Remote Robot Control, and Surgery Planning.

Therefore, this book is of crucial effectiveness for Researchers, Students, End-Users and Manufacturers from several multidisciplinary fields, as the ones related with Artificial Intelligence, Bioengineering, Biology, Biomechanics, Computational Mechanics, Computational Vision, Computer Graphics, Computer Sciences, Computer Vision, Human Motion, Imagiology, Machine Learning, Machine Vision, Mathematics, Medical Image, Medicine, Pattern Recognition, and Physics.

The Editors would like to take this opportunity to thank to all invited authors for sharing their works, experiences and knowledge, making possible its dissemination through this book.

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