1. Record Nr. UNISA996465562903316

Titolo	Computer Vision and Mathematical Methods in Medical and Biomedical Image Analysis [[electronic resource]] : ECCV 2004 Workshops CVAMIA and MMBIA Prague, Czech Republic, May 15, 2004, Revised Selected Papers / / edited by Milan Sonka, Ioannis A. Kakadiaris, Jan Kybic
Pubbl/distr/stampa	Berlin, Heidelberg : , : Springer Berlin Heidelberg : , : Imprint : Springer, , 2004
ISBN	3-540-27816-8 3-540-22675-3
Edizione	[1st ed. 2004.]
Descrizione fisica	1 online resource (XII, 444 p.)
Collana	Lecture Notes in Computer Science, , 0302-9743 ; ; 3117
Disciplina	616.07/54/0151
Soggetti	Optical data processing Computer industry Artificial intelligence Pattern recognition Computer graphics Health informatics Image Processing and Computer Vision The Computer Industry Artificial Intelligence Pattern Recognition Computer Graphics Health Informatics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Acquisition Techniques -- Ultrasound Stimulated Vibro-acoustography -- CT from an Unmodified Standard Fluoroscopy Machine Using a Non-reproducible Path -- Three-Dimensional Object Reconstruction from Compton Scattered Gamma-Ray Data -- Reconstruction -- Cone-Beam Image Reconstruction by Moving Frames -- AQUATICS Reconstruction Software: The Design of a Diagnostic Tool Based on Computer Vision Algorithms -- Towards Automatic Selection of the Regularization

Parameters in Emission Tomgraphy by Fourier Synthesis -- Mathematical Methods -- Extraction of Myocardial Contractility Patterns from Short-Axes MR Images Using Independent Component Analysis -- Principal Geodesic Analysis on Symmetric Spaces: Statistics of Diffusion Tensors -- Symmetric Geodesic Shape Averaging and Shape Interpolation -- Smoothing Impulsive Noise Using Nonlinear Diffusion Filtering -- Level Set and Region Based Surface Propagation for Diffusion Tensor MRI Segmentation -- The Beltrami Flow over Triangulated Manifolds -- Hierarchical Analysis of Low-Contrast Temporal Images with Linear Scale Space -- Medical Image Segmentation -- Segmentation of Medical Images with a Shape and Motion Model: A Bayesian Perspective -- A Multi-scale Geometric Flow for Segmenting Vasculature in MRI -- A 2D Fourier Approach to Deformable Model Segmentation of 3D Medical Images -- Automatic Rib Segmentation in CT Data -- Efficient Initialization for Constrained Active Surfaces, Applications in 3D Medical Images -- An Information Fusion Method for the Automatic Delineation of the Bone-Soft Tissues Interface in Ultrasound Images -- Multi-label Image Segmentation for Medical Applications Based on Graph-Theoretic Electrical Potentials -- Three-Dimensional Mass Reconstruction in Mammography -- Segmentation of Abdominal Aortic Aneurysms with a Non-parametric Appearance Model -- Probabilistic Spatial-Temporal Segmentation of Multiple Sclerosis Lesions -- Segmenting Cell Images: A Deterministic Relaxation Approach -- Registration -- TIGER – A New Model for Spatio-temporal Realignment of FMRI Data -- Robust Registration of 3-D Ultrasound Images Based on Gabor Filter and Mean-Shift Method -- Deformable Image Registration by Adaptive Gaussian Forces -- Applications -- Statistical Imaging for Modeling and Identification of Bacterial Types -- Assessment of Intrathoracic Airway Trees: Methods and In Vivo Validation -- Computer-Aided Measurement of Solid Breast Tumor Features on Ultrasound Images -- Can a Continuity Heuristic Be Used to Resolve the Inclination Ambiguity of Polarized Light Imaging? -- Applications of Image Registration in Human Genome Research -- Fast Marching 3D Reconstruction of Interphase Chromosomes -- Robust Extraction of the Optic Nerve Head in Optical Coherence Tomography -- Scale-Space Diagnostic Criterion for Microscopic Image Analysis -- Image Registration Neural System for the Analysis of Fundus Topology -- Robust Identification of Object Elasticity.

Sommario/riassunto

Medical imaging and medical image analysisare rapidly developing. While m- ical imaging has already become a standard of modern medical care, medical image analysis is still mostly performed visually and qualitatively. The ev- increasing volume of acquired data makes it impossible to utilize them in full. Equally important, the visual approaches to medical image analysis are known to su?er from a lack of reproducibility. A signi?cant researche?ort is devoted to developing algorithms for processing the wealth of data available and extracting the relevant information in a computerized and quantitative fashion. Medical imaging and image analysis are interdisciplinary areas combining electrical, computer, and biomedical engineering; computer science; mathem- ics; physics; statistics; biology; medicine; and other ? elds. Medical imaging and computer vision, interestingly enough, have developed and continue developing somewhat independently. Nevertheless, bringing them together promises to b- e?t both of these ? elds. We were enthusiastic when the organizers of the 2004 European Conference on Computer Vision (ECCV) allowed us to organize a satellite workshop devoted to medical image analysis.