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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 Tomography 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 analysis are rapidly developing. While medical imaging has already become a standard of modern medical care, medical image analysis is still mostly performed visually and qualitatively. The ever-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 suffer from a lack of reproducibility. A significant research effort 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; mathematics; physics; statistics; biology; medicine; and other fields. Medical imaging and computer vision, interestingly enough, have developed and continue developing somewhat independently. Nevertheless, bringing them together promises to benefit both of these fields. 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.
