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Collana	Lecture Notes in Computer Science, , 0302-9743 ; ; 2732
Disciplina	616.07/54/0285
Soggetti	Optical data processing Medical informatics Radiology Artificial intelligence Computer graphics Image Processing and Computer Vision Science, Humanities and Social Sciences, multidisciplinary Health Informatics Imaging / Radiology Artificial Intelligence Computer Graphics
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Shape Modelling -- Shape Modelling Using Markov Random Field Restoration of Point Correspondences -- Optimal Deformable Surface Models for 3D Medical Image Analysis -- Learning Object Correspondences with the Observed Transport Shape Measure -- Shape Discrimination in the Hippocampus Using an MDL Model -- Posters I: Shape Modelling and Analysis -- Minimum Description Length Shape and Appearance Models -- Evaluation of 3D Correspondence Methods for Model Building -- Localization of Anatomical Point Landmarks in 3D Medical Images by Fitting 3D Parametric Intensity Models -- Morphology-Based Cortical Thickness Estimation -- The Shape Operator for Differential Analysis of Images -- Feature Selection for Shape-Based Classification of Biological Objects -- Corresponding

Articular Cartilage Thickness Measurements in the Knee Joint by Modelling the Underlying Bone (Commercial in Confidence) -- Adapting Active Shape Models for 3D Segmentation of Tubular Structures in Medical Images -- A Unified Variational Approach to Denoising and Bias Correction in MR -- Shape Analysis -- Object-Based Strategy for Morphometry of the Cerebral Cortex -- Genus Zero Surface Conformal Mapping and Its Application to Brain Surface Mapping -- Segmentation -- Coupled Multi-shape Model and Mutual Information for Medical Image Segmentation -- Neighbor-Constrained Segmentation with 3D Deformable Models -- Expectation Maximization Strategies for Multi-atlas Multi-label Segmentation -- Quantitative Analysis of Intrathoracic Airway Trees: Methods and Validation -- Posters II: Segmentation, Colour, and Performance -- Multi-view Active Appearance Models: Application to X-Ray LV Angiography and Cardiac MRI -- Tunnelling Descent: A New Algorithm for Active Contour Segmentation of Ultrasound Images -- Improving Appearance Model Matching Using Local Image Structure -- Knowledge-Driven Automated Extraction of the Human Cerebral Ventricular System from MR Images -- Volumetric Texture Description and Discriminant Feature Selection for MRI -- CAD Tool for Burn Diagnosis -- An Inverse Method for the Recovery of Tissue Parameters from Colour Images -- Ideal Observer Model for Detection of Blood Perfusion and Flow Using Ultrasound -- Permutation Tests for Classification: Towards Statistical Significance in Image-Based Studies -- Performance Characterisation -- Ideal-Observer Performance under Signal and Background Uncertainty -- Theoretical Evaluation of the Detectability of Random Lesions in Bayesian Emission Reconstruction -- Registration – Modelling Similarity -- A Unified Statistical and Information Theoretic Framework for Multi-modal Image Registration -- Information Theoretic Similarity Measures in Non-rigid Registration -- A New & Robust Information Theoretic Measure and Its Application to Image Alignment -- Gray Scale Registration of Mammograms Using a Model of Image Acquisition -- Registration – Modelling Deformation -- Constructing Diffeomorphic Representations of Non-rigid Registrations of Medical Images -- Topology Preservation and Regularity in Estimated Deformation Fields -- Large Deformation Inverse Consistent Elastic Image Registration -- Gaussian Distributions on Lie Groups and Their Application to Statistical Shape Analysis -- Posters III: Registration, Function, and Motion -- Non-rigid Image Registration Using a Statistical Spline Deformation Model -- A View-Based Approach to Registration: Theory and Application to Vascular Image Registration -- Meshfree Representation and Computation: Applications to Cardiac Motion Analysis -- Bayesian Multimodality Non-rigid Image Registration via Conditional Density Estimation -- Spatiotemporal Localization of Significant Activation in MEG Using Permutation Tests -- Symmetric BEM Formulation for the M/EEG Forward Problem -- Localization Estimation Algorithm (LEA): A Supervised Prior-Based Approach for Solving the EEG/MEG Inverse Problem -- Multivariate Group Effect Analysis in Functional Magnetic Resonance Imaging -- Meshfree Representation and Computation: Applications to Cardiac Motion Analysis -- Visualization of Myocardial Motion Using MICSR Trinary Checkerboard Display -- Velocity Estimation in Ultrasound Images: A Block Matching Approach -- Cardiac Motion -- Construction of a Statistical Model for Cardiac Motion Analysis Using Nonrigid Image Registration -- Fast Tracking of Cardiac Motion Using 3D-HARP -- fMRI Analysis -- Analysis of Event-Related fMRI Data Using Best Clustering Bases -- Estimation of the Hemodynamic Response Function in Event-Related Functional MRI: Directed Acyclic Graphs for a General Bayesian Inference Framework --

Nonlinear Estimation and Modeling of fMRI Data Using Spatio-temporal Support Vector Regression -- Diffusion Imaging and Tractography -- A Constrained Variational Principle for Direct Estimation and Smoothing of the Diffusion Tensor Field from DWI -- Persistent Angular Structure: New Insights from Diffusion MRI Data. Dummy Version -- Probabilistic Monte Carlo Based Mapping of Cerebral Connections Utilising Whole-Brain Crossing Fibre Information.

Sommario/riassunto

IPMI occupies an important position in the scienti?c calendar. Every two years, it brings together leading researchers in medical image formation, analysis and interpretation, for an international workshop that allows extensive, in-depth d- cussion of new ideas. Many of the most in?uential developments in the ?eld were ?rst presented at IPMI, and the series has done much to foster a rigorous sci- ti?c approach to information processing in medical imaging. IPMI 2003 was held over 5 days in July 2003 at St. Martin's College, - bleside, in the heart of the English Lake District. Full papers were invited on any aspect of information processing in medical imaging, with particular - couragement for submissions exploring generic mathematical or computational principles. Recognizing the rapidly evolving nature of the ?eld, we encouraged a broadinterpretationofmedicalimaging: frommacroscopictomolecularimaging; from applications in patient care to those in biomedical research. We received 123 submissions by the deadline in February 2003. Each paper was reviewed by four members of the Scienti?c Committee, placing particular emphasis on originality, scienti?c rigor, and biomedical relevance. Papers were selected for the meeting by a Paper Selection Committee, based on reviewers' rankings and theirdetailedcomments. Atotalof28paperswereacceptedasoralpresentations and 29 as posters. Unfortunately, the standard was so high that we had to turn down many excellent papers.