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Nota di contenuto	Applications -- Unifying Vascular Information in Intensity-Based Nonrigid Lung CT Registration -- Deformable Image Registration of Follow-Up Breast Magnetic Resonance Images -- 3D-Reconstruction of Basal Cell Carcinoma -- Monocular Deformable Model-to-Image Registration of Vascular Structures -- Poster Session -- Continuity Order of Local Displacement in Volumetric Image Sequence -- Registration of 2D Images from Fast Scanning Ophthalmic Instruments -- Registration of 3D Retinal Optical Coherence Tomography Data and 2D Fundus Images -- A Computational White Matter Atlas for Aging with Surface-Based Representation of Fasciculi -- Anatomical Landmark Based Registration of Contrast Enhanced T1-Weighted MR Images -- Bayesian Estimation of Deformation and Elastic Parameters in Non-rigid Registration -- Functional Non-rigid Registration Validation: A CT Phantom Study -- Evaluation -- Nonlinear Elastic Spline Registration: Evaluation with Longitudinal Huntington's Disease Data --

Evaluating Image Registration Using NIREP -- A New Image Database for 3D/2D Registration Based on the Visible Human Data Set -- Methods Part I -- Unifying Characterization of Deformable Registration Methods Based on the Inherent Parametrization -- Reliability-Driven, Spatially-Adaptive Regularization for Deformable Registration -- Large Deformation Diffeomorphic Registration Using Fine and Coarse Strategies -- Log-Domain Diffeomorphic Registration of Diffusion Tensor Images -- Model Based Registration -- Nonrigid Registration and Template Matching for Coronary Motion Modeling from 4D CTA -- Cardiac Respiratory Motion Modelling by Simultaneous Registration and Modelling from Dynamic MRI Images -- Model-Based Registration for Motion Compensation during EP Ablation Procedures -- Methods II -- Spatial Information Encoded Mutual Information for Nonrigid Registration -- Normalized Measures of Mutual Information with General Definitions of Entropy for Multimodal Image Registration -- Nonlinear Elasticity Registration and Sobolev Gradients.

Sommario/riassunto

Welcome to the proceedings of the 4th Workshop on Biomedical Image Registration (WBIR). Previous WBIRs took place in Bled, Slovenia (1999), at the University of Pennsylvania, USA (2003) and in Utrecht, The Netherlands (2006). This year, WBIR was hosted by the Institute Mathematics and Image Processing and the Fraunhofer Project Group on Image Registration and it was held in Lubbeck, Germany. It provided the opportunity to bring together researchers from all over the world to discuss some of the most recent advances in image registration and its applications. We had an excellent collection of papers that were reviewed by at least three reviewers each from a 35-member Program Committee assembled from a worldwide community of registration experts. This year 17 papers were accepted for oral presentation, while another 7 papers were accepted as poster papers. We believe all of the conference papers were of excellent quality. Registration is a fundamental task in image processing used to match two or more pictures taken, for example, at different times, from different sensors, or from different viewpoints. Establishing the correspondence of structures within medical images is fundamental to diagnosis, treatment planning, and surgical guidance. The conference papers address state-of-the-art techniques for providing reliable and efficient registration techniques, thereby imposing relationships between specific application areas and appropriate registration schemes. We are grateful to all those who contributed to the success of WBIR 2010.
