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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Diffusion Imaging -- Diffusion Propagator Imaging: Using Laplace's Equation and Multiple Shell Acquisitions to Reconstruct the Diffusion Propagator -- Clustering of the Human Skeletal Muscle Fibers Using Linear Programming and Angular Hilbertian Metrics -- PET Imaging -- High-Resolution Adaptive PET Imaging -- Dynamic Dual-Tracer PET Reconstruction -- Image Registration -- DRAMMS: Deformable

Registration via Attribute Matching and Mutual-Saliency Weighting --
Simultaneous Consideration of Spatial Deformation and Tensor
Orientation in Diffusion Tensor Image Registration Using Local Fast
Marching Patterns -- Functional Networks -- Discovering Sparse
Functional Brain Networks Using Group Replicator Dynamics (GRD) --
Multimodal Functional Imaging Using fMRI-Informed Regional EEG/MEG
Source Estimation -- Space Curves -- Tractography Segmentation
Using a Hierarchical Dirichlet Processes Mixture Model -- A Statistical
Model of White Matter Fiber Bundles Based on Currents --
Tractography -- Neural Tractography Using an Unscented Kalman Filter
-- Multi-fiber Reconstruction from DW-MRI Using a Continuous
Mixture of Hyperspherical von Mises-Fisher Distributions -- Poster
Session I -- Regression Models of Atlas Appearance -- Non-rigid
Image Registration with Uniform Spherical Structure Patterns -- Joint
Bayesian Cortical Sulci Recognition and Spatial Normalization --
Image-to-Physical Registration for Image-Guided Interventions Using
3-D Ultrasound and an Ultrasound Imaging Model -- Automatic
Cortical Sulcal Parcellation Based on Surface Principal Direction Flow
Field Tracking -- A New Information-Theoretic Measure to Control the
Robustness-Sensitivity Trade-Off for DMFFD Point-Set Registration --
Generalized L2-Divergence and Its Application to Shape Alignment --
Fully-Automated White Matter Hyperintensity Detection with Anatomical
Prior Knowledge and without FLAIR -- Identification of Growth Seeds in
the Neonate Brain through Surface Helmholtz Decomposition -- Active
Imaging with Dual Spin-Echo Diffusion MRI -- Voxel-by-Voxel
Functional Diffusion Mapping for Early Evaluation of Breast Cancer
Treatment -- MRI Tissue Classification and Bias Field Estimation Based
on Coherent Local Intensity Clustering: A Unified Energy Minimization
Framework -- A Unified Framework for MR Based Disease Classification
-- MARM: Multiscale Adaptive Regression Models for Neuroimaging
Data -- Automatic Segmentation of Brain Structures Using Geometric
Moment Invariants and Artificial Neural Networks -- Adaptive Kernels
for Multi-fiber Reconstruction -- Smooth 3-D Reconstruction for 2-D
Histological Images -- Microscopy -- Nonnegative Mixed-Norm
Preconditioning for Microscopy Image Segmentation -- Coupled
Minimum-Cost Flow Cell Tracking -- Exploratory Analyses --
Persistence Diagrams of Cortical Surface Data -- Exploratory fMRI
Analysis without Spatial Normalization -- Features and Detection --
Marginal Space Learning for Efficient Detection of 2D/3D Anatomical
Structures in Medical Images -- A General and Unifying Framework for
Feature Construction, in Image-Based Pattern Classification -- Image
Guided Surgery -- Bayesian Registration via Local Image Regions:
Information, Selection and Marginalization -- A Non-rigid Registration
Framework That Accommodates Resection and Retraction -- Shape
Analysis -- Discriminative Shape Alignment -- Inverse-Consistent
Surface Mapping with Laplace-Beltrami Eigen-Features -- Poster
Session II -- Estimating Uncertainty in Brain Region Delineations --
Unifying Encoding of Spatial Information in Mutual Information for
Nonrigid Registration -- Projected Generalized Procrustes Alignment --
HARDI Denoising: Variational Regularization of the Spherical Apparent
Diffusion Coefficient sADC -- Coronary Lumen Segmentation Using
Graph Cuts and Robust Kernel Regression -- Dense Registration with
Deformation Priors -- Multivariate High-Dimensional Cortical Folding
Analysis, Combining Complexity and Shape, in Neonates with
Congenital Heart Disease -- The 3D Moore-Rayleigh Test for the
Quantitative Groupwise Comparison of MR Brain Images -- A
Framework for Brain Registration via Simultaneous Surface and Volume
Flow -- Level Set Image Segmentation with a Statistical Overlap

Constraint -- Estimating the Confidence of Statistical Model Based Shape Prediction -- Oriented Morphometry of Folds on Surfaces -- Diffusion MRI Registration Using Orientation Distribution Functions -- Robust Joint Entropy Regularization of Limited View Transmission Tomography Using Gaussian Approximations to the Joint Histogram -- Cortical Correspondence with Probabilistic Fiber Connectivity -- A Variational Image-Based Approach to the Correction of Susceptibility Artifacts in the Alignment of Diffusion Weighted and Structural MRI -- Motion -- 4D MAP Image Reconstruction Incorporating Organ Motion -- Incorporating Patient Breathing Variability into a Stochastic Model of Dose Deposition for Stereotactic Body Radiation Therapy -- Segmentation and Validation -- Estimation of Inferential Uncertainty in Assessing Expert Segmentation Performance from Staple -- Detection of Arterial Calcification in Mammograms by Random Walks.

Sommario/riassunto

This book constitutes the refereed proceedings of the 21st International Conference on Information Processing in Medical Imaging, IPMI 2009, held in Williamsburg, VA, USA, in July 2009. The 26 revised full papers and 33 revised poster papers presented were carefully reviewed and selected from 150 submissions. The papers are organized in topical sections on diffusion imaging, PET imaging, image registration, functional networks, space curves, tractography, microscopy, exploratory analyses, features and detection, image guided surgery, shape analysis, motion, and segmentation and validation.
