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Nota di contenuto	Probabilistic Graphical Models -- Colocalization Estimation Using Graphical Modeling and Variational Bayesian Expectation Maximization: Towards a Parameter-Free Approach -- Template-Based Multimodal Joint Generative Model of Brain Data -- Generative Method to Discover Genetically Driven Image Biomarkers -- MRI Reconstruction A Joint Acquisition-Estimation Framework for MR Phase Imaging -- A Compressed-Sensing Approach for Super-Resolution Reconstruction of Diffusion MRI -- Accelerated High Spatial Resolution Diffusion-

Weighted Imaging -- Clustering -- Joint Spectral Decomposition for the Parcellation of the Human Cerebral Cortex Using Resting-State fMRI -- Joint Clustering and Component Analysis of Correspondenceless Point Sets: Application to Cardiac Statistical Modeling -- Statistical Methods -- Bootstrapped Permutation Test for Multiresponse Inference on Brain Behavior Associations -- Controlling False Discovery Rate in Signal Space for Transformation-Invariant Thresholding of Statistical Maps -- Longitudinal Analysis -- Group Testing for Longitudinal Data -- Spatio-Temporal Signatures to Predict Retinal Disease Recurrence -- Microstructure Imaging -- A Unifying Framework for Spatial and Temporal Diffusion in Diffusion MRI -- Ground Truth for Diffusion MRI in Cancer: A Model-Based Investigation of a Novel Tissue-Mimetic Material -- Shape Analysis -- Anisotropic Distributions on Manifolds: Template Estimation and Most Probable Paths -- A Riemannian Framework for Intrinsic Comparison of Closed Genus-Zero Shapes -- Multi-atlas Fusion Multi-atlas Segmentation as a Graph Labelling Problem: Application to Partially Annotated Atlas Data -- Keypoint Transfer Segmentation -- Fast Image Registration -- Finite-Dimensional Lie Algebras for Fast Diffeomorphic Image Registration -- Fast Optimal Transport Averaging of Neuroimaging Data -- Deformation Models -- Joint Morphometry of Fiber Tracts and Gray Matter Structures Using Double Diffeomorphisms -- A Robust Probabilistic Model for Motion Layer Separation in X-ray Fluoroscopy -- Poster Papers -- Weighted Hashing with Multiple Cues for Cell-Level Analysis of Histopathological Images -- Multiresolution Diffeomorphic Mapping for Cortical Surfaces -- A Comprehensive Computer-Aided Polyp Detection System for Colonoscopy Videos -- A Feature-Based Approach to Big Data Analysis of Medical Images -- Joint Segmentation and Registration Through the Duality of Congealing and Maximum Likelihood Estimate -- Self-Aligning Manifolds for Matching Disparate Medical Image Datasets -- Leveraging EAP-Sparsity for Compressed Sensing of MS-HARDI in (k,q)-Space -- Multi-stage Biomarker Models for Progression Estimation in Alzheimer's Disease -- Measuring Asymmetric Interactions in Resting State Brain Networks -- Shape Classification Using Wasserstein Distance for Brain Morphometry Analysis -- Temporal Trajectory and Progression Score Estimation from Voxelwise Longitudinal Imaging Measures: Application to Amyloid Imaging -- Predicting Semantic Descriptions from Medical Images with Convolutional Neural Networks -- Bodypart Recognition Using Multi-stage Deep Learning -- Multi-subject Manifold Alignment of Functional Network Structures via Joint Diagonalization -- Brain Transfer: Spectral Analysis of Cortical Surfaces and Functional Maps -- Finding a Path for Segmentation Through Sequential Learning -- Pancreatic Tumor Growth Prediction with Multiplicative Growth and Image-Derived Motion -- IMaGe: Iterative Multilevel Probabilistic Graphical Model for Detection and Segmentation of Multiple Sclerosis Lesions in Brain MRI -- Moving Frames for Heart Fiber Reconstruction -- Detail-Preserving PET Reconstruction with Sparse Image Representation and Anatomical Priors -- Automatic Detection of the Uterus and Fallopian Tube Junctions in Laparoscopic Images -- A Mixed-Effects Model with Time Reparametrization for Longitudinal Univariate Manifold-Valued Data -- Prediction of Longitudinal Development of Infant Cortical Surface Shape Using a 4D Current-Based Learning Framework -- Multi-scale Convolutional Neural Networks for Lung Nodule Classification -- Tractography-Driven Groupwise Multi-scale Parcellation of the Cortex -- Illumination Compensation and Normalization Using Low-Rank Decomposition of Multispectral Images in Dermatology -- Efficient Gaussian Process-Based Modelling and Prediction of Image Time Series

-- A Simulation Framework for Quantitative Validation of Artefact Correction in Diffusion MRI -- Towards a Quantified Network Portrait of a Population -- Segmenting the Brain Surface from CT Images with Artifacts Using Dictionary Learning for Non-rigid MR-CT Registration -- AxTract: Microstructure-Driven Tractography Based on the Ensemble Average Propagator -- Sampling from Determinantal Point Processes for Scalable Manifold Learning -- Model-Based Estimation of Microscopic Anisotropy in Macroscopically Isotropic Substrates Using Diffusion MRI -- Multiple Orderings of Events in Disease Progression -- Construction of An Unbiased Spatio-Temporal Atlas of the Tongue During Speech -- Tree-Encoded Conditional Random Fields for Image Synthesis -- Simultaneous Longitudinal Registration with Group-Wise Similarity Prior -- Spatially Weighted Principal Component Regression for High-Dimensional Prediction -- Coupled Stable Overlapping Replicator Dynamics for Multimodal Brain Subnetwork Identification -- Joint 6D k-q Space Compressed Sensing for Accelerated High Angular Resolution Diffusion MRI -- Functional Nonlinear Mixed Effects Models for Longitudinal Image Data.

Sommario/riassunto

This book constitutes the proceedings of the 24th International Conference on Information Processing in Medical Imaging, IPMI 2015, held at the Sabhal Mor Ostaig College on the Isle of Skye, Scotland, UK, in June/July 2015. The 22 full papers and 41 poster papers presented in this volume were carefully reviewed and selected from 195 submissions. They were organized in topical sections named: probabilistic graphical models; MRI reconstruction; clustering; statistical methods; longitudinal analysis; microstructure imaging; shape analysis; multi-atlas fusion; fast image registration; deformation models; and the poster session.