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Nota di contenuto	Temporal-Adaptive Graph Convolutional Network for Automated Identification of Major Depressive Disorder with Resting-State fMRI -- Error Attention Interactive Segmentation of Medical Images through Matting and Fusion -- A Novel fMRI Representation Learning Framework with GAN -- Semi-supervised Segmentation with Self-Training Based on Quality Estimation and Refinement -- 3D Segmentation Networks for Excessive Numbers of Classes: Distinct Bone Segmentation in Upper Bodies -- Super Resolution of Arterial Spin Labeling MR Imaging Using Unsupervised Multi-Scale Generative Adversarial Network -- Self-Recursive Contextual Network for Unsupervised 3D Medical Image Registration -- Automated Tumor Proportion Scoring for Assessment of PD-L1 Expression Based on Multi-Stage Ensemble Strategy -- Uncertainty Quantification in Medical Image Segmentation with Normalizing Flows -- Out-of-Distribution Detection for Skin Lesion Images with Deep Isolation Forest -- A 3D+2D CNN Approach Incorporating Boundary Loss for Stroke Lesion Segmentation -- Linking Adolescent Brain MRI to Obesity via Deep Multi-cue Regression Network -- Robust Multiple Sclerosis Lesion Inpainting with Edge Prior -- Segmentation to Label: Automatic Coronary Artery Labeling from Mask Parcellation -- GSR-Net: Graph Super-Resolution Network for Predicting High-Resolution from Low-Resolution Functional Brain Connectomes -- Anatomy-Aware Cardiac

Motion Estimation -- Division and Fusion: Rethink Convolutional Kernels for 3D Medical Image Segmentation -- LDGAN: Longitudinal-Diagnostic Generative Adversarial Network for Disease Progression Prediction with Missing Structural MRI -- Unsupervised MRI Homogenization: Application to Pediatric Anterior Visual Pathway Segmentation -- Boundary-aware Network for Kidney Tumor Segmentation -- O-Net: An Overall Convolutional Network for Segmentation Tasks -- Label-Driven Brain Deformable Registration Using Structural Similarity and Nonoverlap Constraints -- EczemaNet: Automating Detection and Severity Assessment of Atopic Dermatitis -- Deep Distance Map Regression Network with Shape-aware Loss for Imbalanced Medical Image Segmentation -- Joint Appearance-Feature Domain Adaptation: Application to QSM Segmentation Transfer -- Exploring Functional Difference between Gyri and Sulci via Region-Specific 1D Convolutional Neural Networks -- Detection of Ischemic Infarct Core in Non-Contrast Computed Tomography -- Bayesian Neural Networks for Uncertainty Estimation of Imaging Biomarkers -- Extended Capture Range of Rigid 2D/3D Registration by Estimating Riemannian Pose Gradients -- Structural Connectivity Enriched Functional Brain Network using Simplex Regression with GraphNet -- Constructing High-Order Dynamic Functional Connectivity Networks from Resting-State fMRI for Brain Dementia Identification -- Multi-tasking Siamese Networks for Breast Mass Detection using Dual-view Mammogram Matching -- 3D Volume Reconstruction from Single Lateral X-ray Image via Cross-Modal Discrete Embedding Transition -- Cleft Volume Estimation and Maxilla Completion Using Cascaded Deep Neural Networks -- A Deep Network for Joint Registration and Reconstruction of Images with Pathologies -- Learning Conditional Deformable Shape Templates for Brain Anatomy -- Demographic-Guided Attention in Recurrent Neural Networks for Modeling Neuropathophysiological Heterogeneity -- Unsupervised Learning for Spherical Surface Registration -- Anatomy-guided Convolutional Neural Network for Motion Correction in Fetal Brain MRI -- Gyral Growth Patterns of Macaque Brains Revealed by Scattered Orthogonal Nonnegative Matrix Factorization -- Inhomogeneity Correction in Magnetic Resonance Images Using Deep Image Priors -- Hierarchical and Robust Pathology Image Reading for High-Throughput Cervical Abnormality Screening -- Importance Driven Continual Learning for Segmentation Across Domains -- RDCNet: Instance segmentation with a minimalist recurrent residual network -- Automatic Segmentation of Achilles Tendon Tissues using Deep Convolutional Neural Network -- An End to End System for Measuring Axon Growth -- Interwound Structural and Functional Difference Between Preterm and Term Infant Brains Revealed by Multi-view CCA -- Graph Convolutional Network Based Point Cloud for Head and Neck Vessel Labeling -- Unsupervised Learning-based Nonrigid Registration of High Resolution Histology Images -- Additive Angular Margin for Few Shot Learning to Classify Clinical Endoscopy Images -- Extracting and Leveraging Nodule Features with Lung Inpainting for Local Feature Augmentation -- Gambling Adversarial Nets for Hard Sample Mining and Structured Prediction: Application in Ultrasound Thyroid Nodule Segmentation -- Mammographic Image Conversion between Source and Target Acquisition Systems using CGAN -- An End-to-End learnable Flow Regularized Model for Brain Tumor Segmentation -- Neural Architecture Search for Microscopy Cell Segmentation -- Classification of Ulcerative Colitis Severity in Colonoscopy Videos Using Vascular Pattern Detection -- Predicting Catheter Ablation Outcomes from Heart Rhythm Time-series: Less Is More -- AdaBoosted Deep Ensembles:

Getting Maximum Performance Out of Small Training Datasets -- Cross-Task Representation Learning for Anatomical Landmark Detection -- Cycle Ynet: Semi-supervised Tracking of 3D Anatomical Landmarks -- Learning Hierarchical Semantic Correspondence and Gland Instance Segmentation -- Open-Set Recognition for Skin Lesions using Dermoscopic Images -- End-to-End Coordinate Regression Model with Attention-Guided Mechanism for Landmark Localization in 3D Medical Images -- Enhanced MRI Reconstruction Network using Neural Architecture Search -- Learning Invariant Feature Representation to Improve Generalization across Chest X-ray Datasets -- Noise-aware Standard-dose PET Reconstruction Using General and Adaptive Robust Loss -- Semi-supervised Transfer Learning for Infant Cerebellum Tissue Segmentation -- Informative Feature-guided Siamese Network for Early Diagnosis of ASD.

Sommario/riassunto

This book constitutes the proceedings of the 11th International Workshop on Machine Learning in Medical Imaging, MLMI 2020, held in conjunction with MICCAI 2020, in Lima, Peru, in October 2020. The conference was held virtually due to the COVID-19 pandemic. The 68 papers presented in this volume were carefully reviewed and selected from 101 submissions. They focus on major trends and challenges in the above-mentioned area, aiming to identify new-cutting-edge techniques and their uses in medical imaging. Topics dealt with are: deep learning, generative adversarial learning, ensemble learning, sparse learning, multi-task learning, multi-view learning, manifold learning, and reinforcement learning, with their applications to medical image analysis, computer-aided detection and diagnosis, multi-modality fusion, image reconstruction, image retrieval, cellular image analysis, molecular imaging, digital pathology, etc.