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	Nota di contenuto	Optical Imaging -- Enhancing OCT Signal by Fusion of GANs: Improving Statistical Power of Glaucoma Trials -- A Deep Reinforcement Learning Framework for Frame-by-frame Plaque Tracking on Intravascular Optical Coherence Tomography Image -- Multi-Index Optic Disc Quantification via MultiTask Ensemble Learning -- Retinal Abnormalities Recognition Using Regional Multitask Learning -- Unifying Structure Analysis and Surrogate-driven Function Regression for Glaucoma OCT Image Screening -- Evaluation of Retinal Image Quality Assessment Networks in Different Color-spaces -- 3D Surface-Based Geometric and Topological Quantification of Retinal Microvasculature in OCT-Angiography via Reeb Analysis -- Limited-

Angle Diffuse Optical Tomography Image Reconstruction using Deep Learning -- Data-driven Enhancement of Blurry Retinal Images via Generative Adversarial Networks -- Dual Encoding U-Net for Retinal Vessel Segmentation -- A Deep Learning Design for improving Topology Coherence in Blood Vessel Segmentation -- Boundary and Entropy-driven Adversarial Learning for Fundus Image Segmentation -- Unsupervised Ensemble Strategy for Retinal Vessel Segmentation -- Fully convolutional boundary regression for retina OCT segmentation -- PM-NET: Pyramid Multi-Label Network for Optic Disc and Cup Segmentation -- Biological Age Estimated from Retinal Imaging: A Novel Biomarker of Aging -- Task Adaptive Metric Space for Medium-Shot Medical Image Classification -- Two-Stream CNN with Loose Pair Training for Multi-modal AMD Categorization -- Deep Multi Label Classification in Affine Subspaces -- Multi-scale Microaneurysms Segmentation Using Embedding Triplet Loss -- A Divide-and-Conquer Approach towards Understanding Deep Networks -- Multiclass segmentation as multitask learning for drusen segmentation in retinal optical coherence tomography -- Active Appearance Model Induced Generative Adversarial Networks for Controlled Data Augmentation -- Biomarker Localization by Combining CNN Classifier and Generative Adversarial Network -- Probabilistic Atlases to Enforce Topological Constraints -- Synapse-Aware Skeleton Generation for Neural Circuits -- Seeing Under the Cover: A Physics Guided Learning Approach for In-Bed Pose Estimation -- EDA-Net: Dense Aggregation of Deep and Shallow Information Achieves Quantitative Photoacoustic Blood Oxygenation Imaging Deep in Human Breast -- Fused Detection of Retinal Biomarkers in OCT Volumes -- Vessel-Net: Retinal Vessel Segmentation under Multi-path Supervision -- Ki-GAN: Knowledge Infusion Generative Adversarial Network for Photoacoustic Image Reconstruction in vivo -- Uncertainty guided semisupervised segmentation of retinal layers in OCT images -- Endoscopy -- Triple ANet: Adaptive Abnormal-aware Attention Network for WCE Image Classification -- Selective Feature Aggregation Network with Area-boundary Constraints for Polyp Segmentation -- Deep Sequential Mosaicking of Fetoscopic Videos -- Landmark-guided Deformable Image Registration for Supervised Autonomous Robotic Tumor Resection -- Multi-View Learning with Feature Level Fusion for Cervical Dysplasia Diagnosis -- Real-time Surface Deformation Recovery from Stereo Videos -- Microscopy -- Rectified Cross-Entropy and Upper Transition Loss for Weakly Supervised Whole Slide Image Classifier -- From Whole Slide Imaging to Microscopy: Deep Microscopy Adaptation Network for Histopathology Cancer Image Classification -- Multi-scale Cell Instance Segmentation with Keypoint Graph based Bounding Boxes -- Improving Nuclei/Gland Instance Segmentation in Histopathology Images by Full Resolution Neural Network and Spatial Constrained Loss -- Synthetic Augmentation and Feature-based Filtering for Improved Cervical Histopathology Image Classification -- Cell Tracking with Deep Learning for Cell Detection and Motion Estimation in Low-Frame-Rate -- Accelerated ML-assisted Tumor Detection in High-Resolution Histopathology Images -- Pre-operative Overall Survival Time Prediction for Glioblastoma Patients Using Deep Learning on Both Imaging Phenotype and Genotype -- Pathology-aware deep network visualization and its application in glaucoma image synthesis -- CORAL8: Concurrent Object Regression for Area Localization in Medical Image Panels -- ET-Net: A Generic Edge-Attention Guidance Network for Medical Image Segmentation -- Instance Segmentation of Biomedical Images with an Object-aware Embedding Learned with Local Constraints -- Diverse Multiple Prediction on Neural Image

Reconstruction -- Deep Segmentation-Emendation Model for Gland Instance Segmentation -- Fast and Accurate Electron Microscopy Image Registration with 3D Convolution -- PlacentaNet: Automatic Morphological Characterization of Placenta Photos with Deep Learning -- Deep Multi-Instance Learning for survival prediction from Whole Slide Images -- High-Resolution Diabetic Retinopathy Image Synthesis Manipulated by Grading and Lesions -- Deep Instance-Level Hard Negative Mining Model for Histopathology Images -- Synthetic patches, real images: screening for centrosome aberrations in EM images of human cancer cells -- Patch Transformer for Multi-tagging Whole Slide Histopathology Images -- Pancreatic Cancer Detection in Whole Slide Images Using Noisy Label Annotations -- Encoding histopathological WSIs using GNN for scalable diagnostically relevant regions retrieval -- Local and Global Consistency Regularized Mean Teacher for Semi-supervised Nuclei Classification -- Perceptual Embedding Consistency for Seamless Reconstruction of Tilewise Style Transfer -- Precise Separation of Adjacent Nuclei using a Siamese Neural Network -- PFA-ScanNet: Pyramidal Feature Aggregation with Synergistic Learning for Breast Cancer Metastasis Analysis -- DeepACE: Automated Chromosome Enumeration in Metaphase Cell Images Using Deep Convolutional Neural Networks -- Unsupervised Subtyping of Cholangiocarcinoma Using A Deep Clustering Convolutional Autoencoder -- Evidence Localization for Pathology Images using Weakly Supervised Learning -- Nuclear Instance Segmentation using a Proposal-Free Spatially Aware Deep Learning Framework -- GAN-Based Image Enrichment in Digital Pathology Boosts Segmentation Accuracy -- IRNet: Instance Relation Network for Overlapping Cervical Cell Segmentation -- Weakly Supervised Cell Segmentation in Dense by Propagating from Detection Map -- Understanding Fixation in Fluorescence Microscopy via Robust Non-negative Tensor Factorization, Atlas-based Motion Correction and Functional Statistics -- ConCORDe-Net: Cell Count Regularized Convolutional Neural Network for Cell Detection, and Cell Classification in Multiplex Immunohistochemistry Images -- Multi-task learning of a deep K-nearest neighbour network for histopathological image classification and retrieval -- Multiclass deep active learning for detecting red blood cell subtypes in brightfield microscopy images -- Enhanced Cycle-Consistent Generative Adversarial Network for Color Normalization of H&E Stained Images -- Nuclei Segmentation in Histopathological Images using Two-Stage Learning -- ACE-Net: Biomedical Image Segmentation with Augmented Contracting and Expansive Paths -- CS-Net: Channel and Spatial Attention Network for Curvilinear Structure Segmentation -- PseudoEdgeNet: Nuclei Segmentation only with Point Annotations -- Adversarial Domain Adaptation and Pseudo-Labeling for Cross-Modality Microscopy Image Quantification -- Progressive Learning for Neuronal Population Reconstruction from Optical Microscopy Images -- Whole-Sample Mapping of Cancerous and Benign Tissue Properties -- Multi-Task Neural Networks with Spatial Activation for Retinal Vessel Segmentation and Artery/Vein Classification -- Fine-Scale Vessel Extraction in Fundus Images by Registration with Fluorescein Angiography -- DME-Net: Diabetic Macular Edema Grading by Auxiliary Task Learning -- Attention Guided Network for Retinal Image Segmentation -- An unsupervised domain adaptation approach to classification of stem cell-derived cardiomyocytes.

Sommario/riassunto

The six-volume set LNCS 11764, 11765, 11766, 11767, 11768, and 11769 constitutes the refereed proceedings of the 22nd International Conference on Medical Image Computing and Computer-Assisted

Intervention, MICCAI 2019, held in Shenzhen, China, in October 2019. The 539 revised full papers presented were carefully reviewed and selected from 1730 submissions in a double-blind review process. The papers are organized in the following topical sections: Part I: optical imaging; endoscopy; microscopy. Part II: image segmentation; image registration; cardiovascular imaging; growth, development, atrophy and progression. Part III: neuroimage reconstruction and synthesis; neuroimage segmentation; diffusion weighted magnetic resonance imaging; functional neuroimaging (fMRI); miscellaneous neuroimaging. Part IV: shape; prediction; detection and localization; machine learning; computer-aided diagnosis; image reconstruction and synthesis. Part V: computer assisted interventions; MIC meets CAI. Part VI: computed tomography; X-ray imaging.