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Note generali	Includes index.
Nota di contenuto	Computer Assisted Interventions -- Robust Cochlear Modiolar Axis Detection in CT -- Learning to Avoid Poor Images: Towards Task-aware C-arm Cone-beam CT Trajectories -- Optimizing Clearance of Bézier Spline Trajectories for Minimally-Invasive Surgery -- Direct Visual and Haptic Volume Rendering of Medical Data Sets for an Immersive Exploration in Virtual Reality -- Triplet Feature Learning on Endoscopic Video Manifold for Real-time Gastrointestinal Image Retargeting -- A Novel Endoscopic Navigation System: Simultaneous Endoscope and Radial Ultrasound Probe Tracking Without External Trackers -- An Extremely Fast and Precise Convolutional Neural Network for

Recognition and Localization of Cataract Surgical Tools -- Semi-autonomous Robotic Anastomoses of Vaginal Cuffs using Marker Enhanced 3D Imaging and Path Planning -- Augmented Reality "X-Ray Vision" for Laparoscopic Surgery using Optical See-Through Head-Mounted Display -- Interactive Endoscopy: A Next-Generation, Streamlined User Interface for Lung Surgery Navigation -- Non-invasive Assessment of In Vivo Auricular Cartilage by Ultrashort Echo Time (UTE) T2* Mapping -- INN: Inflated Neural Networks for IPMN Diagnosis -- Development of an Multi-objective Optimized Planning Method for Microwave Liver Tumor Ablation -- Generating large labeled data sets for laparoscopic image processing tasks using unpaired image-to-image translation -- Mask-MCNet: Instance Segmentation in 3D Point Cloud of Intra-oral Scans -- Physics-based Deep Neural Network for Augmented Reality during Liver Surgery -- Detecting Cannabis-Associated Cognitive Impairment using Resting-state fNIRS -- Cross-Domain Conditional Generative Adversarial Networks for Stereoscopic Hyperrealism in Surgical Training -- A Free-view, 3D Gaze-Guided Robotic Scrub Nurse -- Haptic Modes for Multiparameter Control in Robotic Surgery -- Learning to Detect Collisions for Continuum Manipulators without a Prior Model -- Simulation of Balloon-Expandable Coronary Stent Apposition with Plastic Beam Elements -- Virtual Cardiac Surgical Planning through Hemodynamics Simulation and Design Optimization of Fontan Grafts -- 3D Modelling of the residual freezing for renal cryoablation simulation and prediction -- A generative model of hyperelastic strain energy density functions for real-time simulation of brain tissue deformation -- Variational Mandible Shape Completion for Virtual Surgical Planning -- Markerless Image-to-Face Registration for Untethered Augmented Reality in Head and Neck Surgery -- Towards a first mixed-reality first person point of view needle navigation system -- Concept-Centric Visual Turing Tests for Method Validation -- Transferring from ex-vivo to in-vivo: Instrument Localization in 3D Cardiac Ultrasound Using Pyramid-UNet with Hybrid Loss -- A Sparsely Distributed Intra-cardial Ultrasonic Array for Real-time Endocardial Mapping -- FetusMap: Fetal Pose Estimation in 3D Ultrasound -- Agent with Warm Start and Active Termination for Plane Localization in 3D Ultrasound -- Learning and Understanding Deep Spatio-Temporal Representations from Free-Hand Fetal Ultrasound Sweeps -- User guidance for point-of-care echocardiography using multi-task deep neural network -- Integrating 3D Geometry of Organ for Improving Medical Imaging Segmentation -- Estimating Reference Bony Shape Model for Personalized Surgical Reconstruction of Posttraumatic Facial Defects -- A New Approach of Predicting Facial Changes following Orthognathic Surgery using Realistic Lip Sliding Effect -- An Automatic Approach to Reestablish Final Dental Occlusion for 1-Piece Maxillary Orthognathic Surgery -- MIC meets CAI -- A Two-stage Framework for Real-time Guidewire Endpoint Localization -- Investigating the role of VR in a simulation-based medical planning system for coronary interventions -- Learned Full-sampling Reconstruction -- A deep regression model for seed localization in prostate brachytherapy -- Model-Based Surgical Recommendations for Optimal Placement of Epiretinal Implants -- Towards Multiple Instance Learning and Hermann Weyl's Discrepancy for Robust Image-Guided Bronchoscopic Intervention -- Learning Where to Look While Tracking Instruments in Robot-assisted Surgery -- Efficient Soft-Constrained Clustering for Group-Based Labeling -- Leveraging Other Datasets for Medical Imaging Classification: Evaluation of Transfer, Multi-task and Semi-supervised Learning -- Incorporating Temporal Prior from Motion Flow for Instrument

Segmentation in Minimally Invasive Surgery Video -- Hard Frame Detection and Online Mapping for Surgical Phase Recognition -- Automated Surgical Activity Recognition with One Labeled Sequence -- Using 3D Convolutional Neural Networks to learn spatiotemporal features for automatic surgical gesture recognition in video -- Surgical Skill Assessment on In-Vivo Clinical Data via the Clearness of Operating Field -- Graph Neural Network for Interpreting Task-fMRI Biomarkers -- Achieving Accurate Segmentation of Nasopharyngeal Carcinoma in MR Images through Recurrent Attention -- Brain Dynamics Through the Lens of Statistical Mechanics by Unifying Structure and Function -- Synthesis and Inpainting-based MR-CT Registration for Image-Guided Thermal Ablation of Liver Tumors -- CFEA: Collaborative Feature Ensembling Adaptation for Domain Adaptation in Unsupervised Optic Disc and Cup Segmentation -- Gastric cancer detection from endoscopic images using synthesis by GAN -- Deep Local-Global Refinement Network for Stent Analysis in IVOCT Images -- Generalized Non-Rigid Point Set Registration with Hybrid Mixture Models Considering Anisotropic Positional Uncertainties -- Mixed-Supervision Multilevel GAN for Image Quality Enhancement -- Combined Learning for Similar Tasks with Domain-Switching Networks -- Real-time 3D reconstruction of colonoscopic surfaces for determining missing regions -- Human Pose Estimation on Privacy-Preserving Low-Resolution Depth Images -- A Mesh-Aware Ball-Pivoting Algorithm for Generating the Virtual Arachnoid Mater -- Attenuation Imaging with Pulse-Echo Ultrasound based on an Acoustic Reflector -- SWTV-ACE: Spatially Weighted Regularization based Attenuation Coefficient Estimation Method for Hepatic Steatosis Detection -- Deep Learning-based Universal Beamformer for Ultrasound Imaging -- Towards whole placenta segmentation at late gestation using multi-view ultrasound images -- Single Shot Needle Tip Localization in 2D Ultrasound -- Discriminative Correlation Filter Network for Robust Landmark Tracking in Ultrasound Guided Intervention -- Echocardiography Segmentation by Quality Translation using Anatomically Constrained CycleGAN -- Matwo-CapsNet: a Multi-Label Semantic Segmentation Capsules Network -- LumiPath - Towards Real-time Physically-based Rendering on Embedded Devices -- An Integrated Multi-Physics Finite Element Modeling Framework for Deep Brain Stimulation: Preliminary Study on Impact of Brain Shift on Neuronal Pathways.

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.
