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Pages 1-716

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Technical Program for Sunday April 5, 2020

SuAaPl — Coral ABC
Sunday Opening and Plenary (Plenary)

Chair: Jacob, Mathews	University of Iowa
Co-Chair: Ye, Jong Chul	Korea Advanced Inst of Science & Tech

09:30-10:30 — SuAaPl.2

Autonomous AI and Patients: Safety, Efficacy, Equity, N/A.

Abramoff, Michael David (University of Iowa)

SuAbO1 — Oakdale I-II
Registration and Synthesis (Oral Session)

Chair: Kybic, Jan	Czech Technical University in Prague
Co-Chair: Warfield, Simon K.	Harvard Medical School

11:00-11:15 — SuAbO1.1

Coupling Principled Refinement with Bi-Directional Deep Estimation for Robust Deformable 3D Medical Image Registration, pp. 86-90.

Zhang, Yuxi (Dalian University of Technology), Liu, Risheng (Dalian University of Technology), Li, Zi (Dalian University of Technology), Liu, Zhu (Dalian University of Technology), Fan, Xin (Dalian University of Technology), Luo, Zhongxuan (Dalian University of Technology)

11:15-11:30 — SuAbO1.2

Enhanced Image Registration with a Network Paradigm and Incorporation of a Deformation Representation Model, pp. 91-94.

Sang, Yudi (University of California, Los Angeles), Ruan, Dan (University of California Los Angeles)

11:30-11:45 — SuAbO1.3

Validating Uncertainty in Medical Image Translation, pp. 95-98.

Reinhold, Jacob (Johns Hopkins University), He, Yufan (Johns Hopkins University), Han, Shizhong (12 Sigma Technologies), Chen, Yunqiang (12 Sigma Technologies), Gao, Dashan (12 Sigma Technologies), Lee, Junghoon (Johns Hopkins University), Prince, Jerry (Johns Hopkins University), Carass, Aaron (Johns Hopkins University)

11:45-12:00 — SuAbO1.4

Volumetric Registration-Based Cleft Volume Estimation of Alveolar Cleft Grafting Procedures, pp. 99-103.

Zhang, Yungeng (Peking University), Pei, Yuru (Peking University), Chen, Si (Peking University), Guo, Yuke (Luoyang Institute of Science and Technology), Ma, Gengyu (USens Inc), Xu, Tianmin (Peking University), Zha, Hongbin (Peking University)

12:15-12:30 — SuAbO1.6

Joint Registration and Change Detection in Longitudinal Brain MRI, pp. 104-108.

Dufresne, Eléonore (ICube UMR 7357, Université De Strasbourg, CNRS, Strasbourg, Fran), Fortun, Denis (CNRS, Université De Strasbourg), Kumar, Babloo (Indian Institute of Technology (BHU) Varanasi), Kremer, Stephane (University of Strasbourg), Noblet, Vincent (ICube, University of Strasbourg, CNRS)

12:30-12:45 — SuAbO1.7

Age-Conditioned Synthesis of Pediatric Computed Tomography with Auxiliary Classifier Generative Adversarial Networks, pp. 109-112.

Kan, Chi Nok Enoch (Marquette University), Maheen Aboobacker, Najib Akram (Marquette University), Ye, Dong Hye (Marquette University)

SuAbO2 — Oakdale III
Brain Segmentation and Characterization (Oral Session)

Chair: Chung, Moo K.	University of Wisconsin-Madison

11:00-11:15 — SuAbO2.1

Building an Ex Vivo Atlas of the Earliest Brain Regions Affected by Alzheimer's Disease Pathology, pp. 113-117.

Ravikumar, Sadhana (Penn Image Computing and Science Laboratory, Department of Radio), Wisse, Laura (Penn Image Computing and Science Laboratory, Department of Radio), Ittyerah, Ranjit (Penn Image Computing and Science Laboratory, Department of Radio), Lim, Sydney (University of Pennsylvania), Lavery, Madigan (University of Pennsylvania), Xie, Long (Penn Image Computing and Science Laboratory (PICSL), Department), Robinson, John (Center for Neurodegenerative Disease Research (CNDR), University), Schuck, Theresa (Center for Neurodegenerative Disease Research (CNDR), University), Grossman, Murray (Department of Neurology, University of Pennsylvania), Lee, Edward B (University of Pennsylvania), Tisdall, M. Dylan (University of Pennsylvania), Prabhakaran, Karthik (University of Pennsylvania), Detre, John A. (University of Pennsylvania), Das, Sandhitsu (Department of Neurology, University of Pennsylvania), Mizsei, Gabor (University of Pennsylvania), Artacho Pérula, Emilio (Human Neuroanatomy Laboratory, University of Castilla-La Mancha), Iñiguez de Onzoño Martin, María Mercedes (Human Neuroanatomy Laboratory, University of Castilla-La Mancha), Arroyo Jiménez, María del Mar (Human Neuroanatomy Laboratory, University of Castilla-La Mancha), Muñoz López, Mónica (Human Neuroanatomy Laboratory, University of Castilla-La Mancha), Molina Romero, Francisco Javier (Human Neuroanatomy Laboratory, University of Castilla-La Mancha), Marcos Rabal, María Pilar (Human Neuroanatomy Laboratory, University of Castilla-La Mancha), Irwin, David J (University of Pennsylvania), Trojanowski, John (Center for Neurodegenerative Disease Research (CNDR), University), Wolk, David (Department of Neurology, University of Pennsylvania), Insausti, Ricardo (Human Neuroanatomy Laboratory, University of Castilla-La Mancha), Yushkevich, Paul (University of Pennsylvania)

11:15-11:30 — SuAbO2.2

Simultaneous Classification and Segmentation of Intracranial Hemorrhage Using a Fully Convolutional Neural Network, pp. 118-121.

Guo, Danfeng (CuraCloud Corporation), Wei, Haihua (Shenzhen Second People's Hospital), Zhao, Pengfei (CuraCloud Corporation), Pan, Yue (CuraCloud Corporation), Yang, Hao-Yu (CuraCloud Corporation), Wang, Xin (CuraCloud Corporation), Bai, Junjie (CuraCloud Corporation), Cao, Kulin (CuraCloud Corporation), Song, Qi (CuraCloud Corporation, USA), Xia, Jun (Shenzhen Second People's Hospital), Gao, Feng (CuraCloud Corporation), Yin, Youbing (CuraCloud Corporation)

11:30-11:45 — SuAbO2.3

Deep Mouse: An End-To-End Auto-Context Refinement Framework for Brain Ventricle & Body Segmentation in Embryonic Mice Ultrasound Volumes, pp. 122-126.

Xu, Tongda (New York University), Qiu, Ziming (New York University), Das, William (Hunter College High School), Wang, Chuiyu (Beihang University), Langerman, Jack (NYU / Independent / Bell Labs), Nair, Nitin (New York University), Aristizabal, Orlando (Riverside Research Institute), Mamou, Jonathan (Riverside Research), Turnbull, Daniel H. (New York University School of Medicine), Ketterling, Jeffrey A. (Riverside Research Institute), Wang, Yao (Polytechnic Institute of New York University)

11:45-12:00	SuAbO2.4

CNN Detection of New and Enlarging Multiple Sclerosis Lesions from Longitudinal MRI Using Subtraction Images, pp. 127-130.

Mohammadi Sepahvand, Nazanin (McGill), Arnold, Douglas L. (NeuroRx Research, Montreal, Quebec, Canada), Arbel, Tal (Centre for Intelligent Machines, McGill University)

12:00-12:15	SuAbO2.5

SynergyNet: A Fusion Framework for Multiple Sclerosis Brain MRI Segmentation with Local Refinement, pp. 131-135.

Vang, Yeeleng Scott (University of California, Irvine), Cao, Yingxin (University of California, Irvine), Chang, Peter (University of California, Irvine), Chow, Daniel (University of California, Irvine), Paul, Friedemann (Charité – Universitätsmedizin Berlin, Germany), Scheel, Michael (Charite-Univertatsmedizin), Brandt, Alexander (Charité – Universitätsmedizin Berlin, Germany), Xie, Xiaohui (University of California, Irvine)

12:15-12:30	SuAbO2.6

Braided Networks for Scan-Aware MRI Brain Tissue Segmentation, pp. 136-139.

Mostapha, Mahmoud (University of North Carolina at Chapel Hill), Mailhe, Boris (Siemens Healthineers), Chen, Xiao (Siemens Healthineers, Digital Technology and Innovation), Ceccaldi, Pascal (Siemens Healthineers, Digital Technology and Innovation), Yoo, Youngjin (Siemens Healthineers, Digital Technology and Innovation), Nadar, Mariappan (Siemens Corporation, Corporate Technology)

12:30-12:45	SuAbO2.7

7t Guided 3t Brain Tissue Segmentation Using Cascaded Nested Network, pp. 140-143.

Wei, Jie (Northwestern Polytechnical University), Bui, Duc Toan (University of North Carolina at Chapel Hill), Wu, Zhengwang (UNC-Chapel Hill), Wang, Li (UNC-CHAPEL HILL), Xia, Yong (Northwestern Polytechnical University), Li, Gang (University of North Carolina at Chapel Hill), Shen, Dinggang (UNC-Chapel Hill)

SuAbO3	Oakdale IV-V
Optical Microscopy and Analysis (Oral Session)	
Chair: Wählby, Carolina	Centre for Image Analysis and Science for Life Laboratory, Uppsala University, Sweden
Co-Chair: Lockett, Stephen	Frederick National Laboratory for Cancer Research

11:15-11:30	SuAbO3.2

ASCNet: Adaptive-Scale Convolutional Neural Networks for Multi-Scale Feature Learning, pp. 144-148.

Zhang, Mo (Peking University), Zhao, Jie (Peking University), Li, Xiang (Harvard Medical School, Massachusetts General Hospital), Li, Quanzheng (Harvard Medical School, Massachusetts General Hospital), Zhang, Li (Peking University)

11:30-11:45	SuAbO3.3

Probabilistic Inference for Camera Calibration in Light Microscopy under Circular Motion, pp. 149-153.

Guo, Yuanhao (Chinese Academy of Sciences), Verbeek, Fons J. (Leiden University), Yang, Ge (Institute of Automation, Chinese Academy of Sciences)

11:45-12:00	SuAbO3.4

Fully Unsupervised Probabilistic Noise2void, pp. 154-158.

Prakash, Mangal (MPI-CBG), Lalit, Manan (MPI-CBG), Tomancak, Pavel (MPI-CBG), Krull, Alexander (MPI-CBG), Jug, Florian (MPI-CBG)

12:00-12:15	SuAbO3.5

Removing Structured Noise with Self-Supervised Blind-Spot Networks, pp. 159-163.

Broaddus, Coleman (Max Planck Institute for Molecular Cell Biology and Genetics), Krull, Alexander (MPI-CBG), Weigert, Martin (MPI-CBG), Schmidt, Uwe (MPI-CBG), Myers, Eugene (Max Planck Institute of Molecular Cell Biology and Genetics)

12:15-12:30	SuAbO3.6

DeepFocus: A Few-Shot Microscope Slide Auto-Focus Using a Sample Invariant CNN-Based Sharpness Function, pp. 164-168.

Shajkofci, Adrian (Idiap Research Institute), Liebling, Michael (Idiap Research Institute)

12:30-12:45	SuAbO3.7

Fine-Grained Multi-Instance Classification in Microscopy through Deep Attention, pp. 169-173.

Fan, Mengran (University of Oxford), Chakraborti, Tapabrata (University of Oxford), Chang, Eric I-Chao (Microsoft Research), Xu, Yan (Beihang University, School of Biology and Medicine; Microsoft Re), Rittscher, Jens (University of Oxford)

SuPaO1	Oakdale I-II
CT Reconstruction (Oral Session)	
Co-Chair: Ducros, Nicolas	Univ. Lyon, CREATIS

14:15-14:30	SuPaO1.1

Two-Layer Residual Sparsifying Transform Learning for Image Reconstruction, pp. 174-177.

Zheng, Xuehang (Shanghai Jiaotong University), Ravishankar, Saiprasad (Michigan State University), Long, Yong (Shanghai Jiao Tong University), Klasky, Marc (Los Alamos National Laboratory), Wohlberg, Brendt (Los Alamos National Laboratory)

14:30-14:45	SuPaO1.2

Autoregression and Structured Low-Rank Modeling of Sinograms, pp. 178-181.

Lobos, Rodrigo Alejandro (University of Southern California), Leahy, Richard (USC), Haldar, Justin (University of Southern California)

14:45-15:00	SuPaO1.3

Adaptive Regularization for Three-Dimensional Optical Diffraction Tomography, pp. 182-186.

Pham, Thanh-an (Ecole Polytechnique Fédérale De Lausanne (EPFL)), Soubies, Emmanuel (CNRS), Ahmed, Ayoub (Ecole Polytechnique Fédérale De Lausanne (EPFL)), Demetri, Psaltis (Ecole Polytechnique Fédérale De Lausanne (EPFL)), Unser, Michael (Ecole Polytechnique Fédérale De Lausanne (EPFL))

15:00-15:15	SuPaO1.4

An Alternating Projection-Image Domains Algorithm for Spectral CT, pp. 187-190.

Jolivet, Frederic (Université Grenoble Alpes, CEA, LETI, F-38000 Grenoble, France), Fournier, Clarisse (Université Grenoble Alpes, CEA, LETI, F-38000 Grenoble, France), Garcin, Michel (Université Grenoble Alpes, CEA, LETI, F-38000 Grenoble, France), Lenka, Zdeborová (Institut De Physique Théorique, Université Paris Saclay, CNRS, C), Brambilla, Andrea (Université Grenoble Alpes, CEA, LETI, F-38000 Grenoble, France)

15:15-15:30	SuPaO1.5

Block Axial Checkerboarding: A Distributed Algorithm for Helical X-Ray CT Reconstruction, pp. 191-194.

Murthy, Naveen (University of Michigan), Fessler, Jeff (Univ. Michigan)

15:30-15:45	SuPaO1.6

Transfer-GAN: Multimodal CT Image Super-Resolution Via Transfer Generative Adversarial Networks, pp. 195-198.

Xiao, Yao (University of Florida), Peters, Keith (University of Florida), Fox, W. Christopher (University of Florida), Rees, John (University of Florida), Rajderkar, Dhanashree (University of Florida), Arreola, Manuel (University of Florida), Barreto, Izabella (University of Florida), Wesley, Bolch (University of Florida), Fang, Ruogu (University of Florida)

15:45-16:00	SuPaO1.7

Hessian Splines for Scanning Transmission X-Ray Microscopy, pp. 199-202.

Debarre, Thomas (Ecole Polytechnique Fédérale De Lausanne), Watts, Benjamin (Paul Scherrer Institute), Rösner, Benedikt (Paul Scherrer Institute), Unser, Michael (EPFL)

SuPaO2	Oakdale III
Segmentation Applications and Methods I (Oral Session)	
Chair: Uhlmann, Virginie	EMBL-EBI
Co-Chair: Dellepiane, Silvana	Università Degli Studi Di Genova

14:15-14:30	SuPaO2.1

Weakly Supervised Lesion Co-Segmentation on CT Scans, pp. 203-206.

Agarwal, Vatsal (NIH Clinical Center), Tang, Youbao (National Institutes of Health), Xiao, Jing (Ping an Technology Co., Ltd.,), Summers, Ronald (National Institutes of Health Clinical Center)

14:30-14:45	SuPaO2.2

A Fully 3D Cascaded Framework for Pancreas Segmentation, pp. 207-211.

Wang, Wenzhe (Zhejiang University), Song, Qingyu (Zhejiang University), Feng, Ruiwei (Zhejiang University, China), Chen, Tingting (Zhejiang University), Chen, Jintai (Zhejiang University), Chen, Danny Z. (University of Notre Dame), Wu, Jian (Zhejiang University)

14:45-15:00	SuPaO2.3

MI-UNet: Improved Segmentation in Ureteroscopy, pp. 212-216.

Gupta, Soumya (University of Oxford), Ali, Sharib (University of Oxford), Goldsmith, Louise (The Churchill, Oxford University Hospitals NHS Trust), Turney, Benjamin W. (University of Oxford), Rittscher, Jens (University of Oxford)

15:00-15:15	SuPaO2.4

HBNet: Hybrid Blocks Network for Segmentation of Gastric Tumor from Ordinary CT Images, pp. 217-220.

Zhang, Yongtao (ShenZhen University), Lei, Baiying (Shenzhen University), Fu, Chao (Department of Radiology, China-Japan Friendship Hospital, Beijin), Du, Jie (ShenZhen University), Zhu, Xinjian (The Shenzhen University), Han, Xiaowei (Department of Radiology, China-Japan Friendship Hospital, Beijin), Du, Lei (Department of Radiology, China-Japan Friendship Hospital, Beijin), Gao, Wenwen (Department of Radiology, China-Japan Friendship Hospital, Beijin), Wang, Tianfu (Shenzhen University), Ma, Guolin (Department of Radiology, China-Japan Friendship Hospital, Beijin)

15:15-15:30	SuPaO2.5

Fully-Automated Semantic Segmentation of Wireless Capsule Endoscopy Abnormalities, pp. 221-224.

Paul, Sukriti (Indian Institute of Science), Devi Gundabattula, Hanitha (P.V.P Siddhartha Institute of Technology), Seelamantula, Chandra Sekhar (Indian Institute of Science, Bangalore), V.R., Mujeeb (Command Hospital Air Force), Prasad, Ajay S. (Command Hospital Air Force)

15:30-15:45	SuPaO2.6

SSN: A Stair-Shape Network for Real-Time Polyp Segmentation in Colonoscopy Images, pp. 225-229.

Feng, Ruiwei (Zhejiang University, China), Lei, Biwen (Zhejiang University), Wang, Wenzhe (Zhejiang University), Chen, Tingting (Zhejiang University), Chen, Jintai (Zhejiang University), Chen, Danny Z. (University of Notre Dame), Wu, Jian (Zhejiang University)

15:45-16:00	SuPaO2.7

DiskMask: Focusing Object Features for Accurate Instance Segmentation of Elongated or Overlapping Objects, pp. 230-234.

Böhm, Anton (University of Freiburg), Mayer, Nikolaus (University of Freiburg), Brox, Thomas (University of Freiburg)

SuPaO3	Oakdale IV-V
Histopathology (Oral Session)	
Chair: Rittscher, Jens	University of Oxford

14:15-14:30	SuPaO3.1

Multiple Instance Learning Via Deep Hierarchical Exploration for Histology Image Classification, pp. 235-238.

Hering, Jan (Faculty of Electrical Engineering, Czech Technical University), Kybic, Jan (Czech Technical University in Prague)

14:30-14:45	SuPaO3.2

Weakly Supervised Prostate TMA Classification Via Graph Convolutional Networks, pp. 239-243.

Wang, Jingwen (Brigham and Women's Hospital), Chen, Richard (Harvard Medical School), Lu, Ming Yang (Pathology, Brigham and Women's Hospital, Harvard Medical School), Alex, Baras (Johns Hopkins University), Mahmood, Faisal (Harvard Medical School)

14:45-15:00	SuPaO3.3

Informative Retrieval Framework for Histopathology Whole Slides Images Based on Deep Hashing Network, pp. 244-248.

Hu, Dingyi (Beihang University), Zheng, Yushan (Beihang University), Zhang, Haopeng (Beihang University), Sun, Shujiao (Beihang University), Shi, Jun (Hefei University of Technology), Xie, Fengying (Beihang University), Jiang, Zhiguo (Beihang University)

15:00-15:15	SuPaO3.4

Circular Anchors for the Detection of Hematopoietic Cells Using RetinaNet, pp. 249-253.

Gräbel, Philipp (RWTH Aachen University), Crysandt, Martina (Klinik Für Hämatologie, Onkologie, Hämostaseologie Und Stammzell), Özkan, Özcan (RWTH Aachen University), Herwartz, Reinhilde (Uniklinik RWTH Aachen), Melanie, Baumann (Klinik Für Hämatologie, Onkologie, Hämostaseologie Und Stammzell), Klinkhammer, Barbara Mara (RWTH Aachen University), Boor, Peter (RWTH Aachen University, University Hospital Aachen), Brümmendorf, Tim Hendrik (Klinik Für Hämatologie, Onkologie, Hämostaseologie Und Stammzell), Merhof, Dorit (RWTH Aachen University)

15:15-15:30	SuPaO3.5

Prior-Aware CNN with Multi-Task Learning for Colon Images Analysis, pp. 254-257.

Yan, Chaoyang (Nanjing University of Information Science & Technology), Xu, Jun (Nanjing University of Information Science and Technology), Xie, Jiawei (Nanjing University of Information Science & Technology), Cai, Chengfei (Nanjing University of Information Science & Technology), Lu, Haoda (Nanjing University of Information Science & Technology)

15:30-15:45	SuPaO3.6

Bending Loss Regularized Network for Nuclei Segmentation in Histopathology Images, pp. 258-262.

Wang, Haotian (University of Idaho), Xian, Min (University of Idaho), Vakanski, Aleksandar (University of Idaho)

15:45-16:00	SuPaO3.7

Segmentation and Classification of Melanoma and Nevus in Whole Slide Images, pp. 263-266.

van Zon, Mike (Eindhoven University of Technology), Stathonikos, Nikolas (University Medical Center Utrecht), Blokx, Willeke A.M. (University Medical Center Utrecht), Komina, Selim (3University "Ss Ciril and Methodius"), Maas, Sybren L.N. (University Medical Center Utrecht), Pluim, Josien (Eindhoven University of Technology), van Diest, Paul J. (University Medical Center Utrecht), Veta, Mitko (Eindhoven University of Technology)

SuPbPo	Oakdale Foyer Coral Foyer
Sunday Poster PM (Poster Session)	

16:00-17:30	Sub-session SuPbPo-01

Brain Connectivity I
Poster Session, 7 papers

16:00-17:30	Sub-session SuPbPo-02

Ultrasound Imaging and Analysis I
Poster Session, 7 papers

16:00-17:30	Sub-session SuPbPo-03

Abdomen Segmentation
Poster Session, 7 papers

16:00-17:30	Sub-session SuPbPo-04

Brain Segmentation and Characterization I
Poster Session, 8 papers

16:00-17:30	Sub-session SuPbPo-05

Machine Learning for Brain Studies I
Poster Session, 9 papers

16:00-17:30	Sub-session SuPbPo-06

Segmentation – Methods & Applications I
Poster Session, 7 papers

16:00-17:30	Sub-session SuPbPo-07

Histopathology I
Poster Session, 7 papers

16:00-17:30	Sub-session SuPbPo-08

Optical Microscopy and Analysis I
Poster Session, 8 papers

SuPbPo-01	Oakdale Foyer Coral Foyer
Brain Connectivity I (Poster Session)	
Chair: Lepore, Natasha	USC / Children's Hospital Los Angeles
Co-Chair: Ye, Chuyang	Beijing Institute of Technology

16:00-17:30	SuPbPo-01.1

A Stem-Based Dissection of Inferior Fronto-Occipital Fasciculus with a Deep Learning Model, pp. 267-270.

Astolfi, Pietro (University of Trento), De Benedictis, Alessandro (Neurosurgery Unit, Bambino Gesù Children's Hospital), Sarubbo, Silvio (S. Chiara Hospital APSS), Bertò, Giulia (University of Trento), Olivetti, Emanuele (Fondazione Bruno Kessler (FBK)), Sona, Diego (Istituto Italiano Di Tecnologia (IIT)), Avesani, Paolo (Fondazione Bruno Kessler (FBK))

16:00-17:30	SuPbPo-01.2

Recognition of Event-Associated Brain Functional Networks in EEG for Brain Network Based Applications, pp. 271-274.

Gonuguntla, Venkateswarlu (Samsung Medical Center), Veluvolu, Kalyana C. (Kyungpook National University), Kim, Jae-Hun (Samsung Medical Center)

16:00-17:30	SuPbPo-01.3

Association between Dynamic Functional Connectivity and Intelligence, pp. 275-278.

Ashrafi, Mahnaz (University of Tehran), Soltanian-Zadeh, Hamid (University of Tehran)

16:00-17:30	SuPbPo-01.4

Semi-Supervised Brain Lesion Segmentation Using Training Images with and without Lesions, pp. 279-282.

Liu, Chenghao (Beijing Institute of Technology), Pang, Fengqian (North China University of Technology), Liu, Yanlin (Beijing Institute of Technology), Liang, Kongming (PKU), Li, Xiuli (Deepwise Inc), Zeng, Xiangzhu (Peking University Third Hospital, Beijing, China), Ye, Chuyang (Beijing Institute of Technology)

16:00-17:30	SuPbPo-01.5

Compensatory Brain Connection Discovery in Alzheimer's Disease, pp. 283-287.

Aganj, Iman (Martinos Center, MGH, Harvard), Frau-Pascual, Aina (Massachusetts General Hospital, Harvard Medical School), Iglesias, Juan Eugenio (University College London), Yendiki, Anastasia (Harvard Medical School), Augustinack, Jean (Massachusetts General Hospital, Harvard Medical School), Salat, David (Massachusetts General Hospital, Harvard Medical School), Fischl, Bruce (A. A. Martinos Center for Biomedical Imaging, Dept. of Radiology)

16:00-17:30	SuPbPo-01.6

A Generalized Framework of Pathlength Associated Community Estimation for Brain Structural Network, pp. 288-291.

Chen, Yurong (University of Pittsburgh), Tang, Haoteng (University of Pittsburgh), Guo, Lei (University of Pittsburgh), Peven, Jamie C. (University of Pittsburgh), Huang, Heng (University of Pittsburgh), Leow, Alex D. (University of Illinois at Chicago), Lamar, Melissa (Rush University Medical Center), Zhan, Liang (University of Pittsburgh)

16:00-17:30	SuPbPo-01.7

Characterizing the Propagation Pattern of Neurodegeneration in Alzheimer's Disease by Longitudinal Network Analysis, pp. 292-295.

Wang, Yueting (University of North Carolina at Chapel Hill), Yang, Defu (Hangzhou Dianzi University), Li, Quefeng (University of North Carolina at Chapel Hill), Kaufer, Daniel (University of North Carolina at Chapel Hill), Styner, Martin (UNC at Chapel Hill), Wu, Guorong (University of North Carolina at Chapel Hill)

SuPbPo-02	Oakdale Foyer Coral Foyer
Ultrasound Imaging and Analysis I (Poster Session)	
Chair: Kouamé, Denis	Université De Toulouse III, IRIT UMR CNRS 5505
Co-Chair: Luo, Jianwen	Tsinghua University

16:00-17:30	SuPbPo-02.1

An Improved Deep Learning Approach for Thyroid Nodule Diagnosis, pp. 296-299.

Guo, Xiangdong (Anhui University), Zhao, Haifeng (School of Computer Science and Technology, Anhui University), Tang, Zhenyu (Beihang University)

16:00-17:30	SuPbPo-02.2

Directional Beam Focusing Based Dual Apodization Approach for Improved Vector Flow Imaging, pp. 300-303.

A. N., Madhavanunni (Indian Institute of Technology Palakkad, India), Raveendranatha Panicker, Mahesh (Indian Institute of Technology Palakkad)

16:00-17:30	SuPbPo-02.3

Compressed Sensing for Data Reduction in Synthetic Aperture Ultrasound Imaging: A Feasibility Study, pp. 304-307.

R, Anand R (Indian Institute of Technology Madras, Chennai, India), Thittai, Arun Kumar (IIT MADRAS)

16:00-17:30	SuPbPo-02.4

High-Frequency Quantitative Photoacoustic Imaging and Pixel-Level Tissue Classification, pp. 308-311.

Basavarajappa, Lokesh (University of Texas at Dallas), Hoyt, Kenneth (University of Texas at Dallas)

16:00-17:30	SuPbPo-02.5

A FILTERED DELAY WEIGHT MULTIPLY and SUM (F-DwMAS) BEAMFORMING for ULTRASOUND IMAGING: PRELIMINARY RESULTS, pp. 312-315.

Vayyeti, Anudeep (Indian Institute of Technology Madras), Thittai, Arun Kumar (IIT MADRAS)

16:00-17:30	SuPbPo-02.6

Reflection Ultrasound Tomography Using Localized Freehand Scans, pp. 316-320.

Benjamin, Alex (MIT), Ely, Gregory (Massachusetts Institute of Technology), Fincke, Jonathan (Massachusetts Institute of Technology), Anthony, Brian W. (Massachusetts Institute of Technology)

16:00-17:30	SuPbPo-02.7

Regularized Kurtosis Imaging and Its Comparison with Regularized Log Spectral Difference and Regularized Nakagami Imaging for Microwave Hyperthermia Hotspot Monitoring, pp. 321-324.

Kothawala, AliArshad (Indian Institute of Technology Madras), Baskaran, Divya Baskaran (Indian Institute of Technology Madras), Arunachalam, Kavitha (Duke University), Thittai, Arun Kumar (IIT MADRAS)

SuPbPo-03	Oakdale Foyer Coral Foyer
Abdomen Segmentation (Poster Session)	
Chair: Cunha, Alexandre	California Institute of Technology

16:00-17:30	SuPbPo-03.1

CNN in CT Image Segmentation: Beyond Loss Function for Exploiting Ground Truth Images, pp. 325-328.

Song, Youyi (The Hong Kong Polytechnic University), Yu, Zhen (SZU), Zhou, Teng (Zhouteng@stu.edu.cn), Teoh, Jeremy Yuen-Chun (The Chinese University of Hong Kong), Lei, Baiying (Shenzhen University), Choi, Kup-Sze (The Hong Kong Polytechnic University), Qin, Jing (Center for Smart Health, School of Nursing, the Hong Kong Polyte)

16:00-17:30	SuPbPo-03.2

Progressive Abdominal Segmentation with Adaptively Hard Region Prediction and Feature Enhancement, pp. 329-332.

Wang, Qin (The Chinese University of Hongkong(Shenzhen) & Shenzhen Research), Zhao, Weibing (The Chinese University of Hong Kong, Shenzhen, Shenzhen Research), Zhang, Ruimao (Sensetime Research), Li, Zhen (Chinese University of Hong Kong, Shenzhen), Shu Guang, Cui (CUHK-SZ)

16:00-17:30	SuPbPo-03.3

An Efficient Hybrid Model for Kidney Tumor Segmentation in Ct Images, pp. 333-336.

Yan, Xu (CUHK-SZ), Yuan, Kun (University of Ottawa), Zhao, Weibing (The Chinese University of Hong Kong, Shenzhen, Shenzhen Research), Wang, Sheng (King Abdullah University of Science and Technology), Li, Zhen (Chinese University of Hong Kong, Shenzhen), Shu Guang, Cui (CUHK-SZ)

16:00-17:30	SuPbPo-03.4

Diagnostic Image Quality Assessment and Classification in Medical Imaging: Opportunities and Challenges, pp. 337-340.

Ma, Jeffrey (California Institute of Technology), Nakarmi, Ukash (Stanford University), Yue Sik Kin, Cedric (Stanford University, Department of Radiology), Sandino, Christopher (Stanford University, Department of Electrical Engineering), Cheng, Joseph (Stanford University), Syed, Ali Bin (Stanford University, Department of Radiology), Wei, Peter (Stanford University, Department of Radiology), Pauly, John M. (Stanford University, Department of Electrical Engineering), Vasanawala, Shreyas (Stanford University)

16:00-17:30	SuPbPo-03.5

A Triple-Stage Self-Guided Network for Kidney Tumor Segmentation, pp. 341-344.

Hou, Xiaoshuai (Ping an Healthcare Technology), Chunmei, Xie (Ping an Healthcare Technology), Li, Fengyi (Ping an Healthcare Technology), Wang, Jiaping (Ping an Healthcare Technology), Lv, Chuanfeng (PingAn Tech), Xie, Guotong (PingAn Tech), Nan, Yang (Ping an Healthcare Technology)

16:00-17:30	SuPbPo-03.6

Automated Measurement of Pancreatic Fat and Iron Concentration Using Multi-Echo and T1-Weighted Mri Data, pp. 345-348.

Basty, Nicolas (University of Westminster), Liu, Yi (Calico Life Sciences), Cule, Madeleine (Calico Life Sciences), Thomas, Elizabeth Louise (University of Westminster), Bell, Jimmy David (University of Westminster), Whitcher, Brandon (University of Westminster)

16:00-17:30	SuPbPo-03.7

FGB: Feature Guidance Branch for Organ Detection in Medical Images, pp. 349-353.

Wang, Yixin (Chinese Academy of Sciences; University of Chinese Academy of Sci), Zhang, Yao (University of Chinese Academy of Sciences), Liu, Li (Lenovo AI Lab), Zhong, Cheng (Lenovo AI Lab), Tian, Jiang (Lenovo AI Lab), Zhang, Yang (Lenovo AI Lab), Shi, Zhongchao (Lenovo AI Lab), He, Zhiqiang (Lenovo)

SuPbPo-04	Oakdale Foyer Coral Foyer
Brain Segmentation and Characterization I (Poster Session)	
Chair: Staib, Lawrence H.	Yale University
Co-Chair: Esteban, Oscar	Stanford University

16:00-17:30	SuPbPo-04.1

Annotation-Free Gliomas Segmentation Based on a Few Labeled General Brain Tumor Images, pp. 354-358.

Dong, Hexin (Peking University), Yu, Fei (Peking University), Jiang, Han (OpenBayes Inc), Zhang, Hua (Beijing Tiantan Hospital Affiliated to Capital Medical Universit), Dong, Bin (Peking University), Li, Quanzheng (Harvard Medical School, Massachusetts General Hospital), Zhang, Li (Peking University)

16:00-17:30	SuPbPo-04.2

6-Month Infant Brain MRI Segmentation Guided by 24-Month Data Using Cycle-Consistent Adversarial Networks, pp. 359-362.

Bui, Duc Toan (University of North Carolina at Chapel Hill), Wang, Li (UNC-CHAPEL HILL), Lin, Weili (UNC-CHAPEL HILL), Li, Gang (University of North Carolina at Chapel Hill), Shen, Dinggang (UNC-Chapel Hill)

16:00-17:30	SuPbPo-04.3

VoteNet+ : An Improved Deep Learning Label Fusion Method for Multi-Atlas Segmentation, pp. 363-367.

Ding, Zhipeng (University of North Carolina at Chapel Hill), Han, Xu (The University of North Carolina at Chapel Hill), Niethammer, Marc (University of North Carolina at Chapel Hill)

16:00-17:30	SuPbPo-04.4

Automatic Segmentation of White Matter Tracts Using Multiple Brain Mri Sequences, pp. 368-371.

Nelkenbaum, Ilya (Tel Aviv University), Tsarfaty, Galia (Sheba Medical Center), Kiryati, Nahum (Tel Aviv University), Konen, Eli (Diagnostic Imaging Unit, Sheba Medical Center), Mayer, Arnaldo (Sheba Medical Center)

16:00-17:30	SuPbPo-04.5

Spectral Graph Transformer Networks for Brain Surface Parcellation, pp. 372-376.

He, Ran (Beijing Institute of Technology), Gopinath, Karthik (ETS Montreal), Desrosiers, Christian (École De Technologie Supérieure), Lombaert, Herve (ETS Montreal)

16:00-17:30	SuPbPo-04.6

A Multi-Modality Fusion Network Based on Attention Mechanism for Brain Tumor Segmentation, pp. 377-380.

Zhou, Tongxue (INSA Rouen, University De Rouen), Ruan, Su (Universite De Rouen), Guo, Yu (Tianjin University), Canu, Stéphane (Normandie Univ, INSA Rouen, UNIROUEN, UNIHAVRE, LITIS)

16:00-17:30	SuPbPo-04.7

Choroid Plexus Segmentation Using Optimized 3D U-Net, pp. 381-384.

Zhao, Li (Children's National Hospital), Feng, Xue (University of Virginia), Meyer, Craig H. (University of Virginia), Alsop, David (Beth Israel Deaconess Medical Center and Harvard Medical School)

16:00-17:30	SuPbPo-04.8

Robust Brain Magnetic Resonance Image Segmentation for Hydrocephalus Patients: Hard and Soft Attention, pp. 385-389.

Ren, Xuhua (Shanghai Jiao Tong University), Huo, Jiayu (Shanghai Jiao Tong University), Xuan, Kai (Shanghai Jiao Tong University), Wei, Dongming (Shanghai Jiao Tong University), Zhang, Lichi (Shanghai Jiao Tong University), Wang, Qian (Shanghai Jiao Tong University)

SuPbPo-05	Oakdale Foyer Coral Foyer

Machine Learning for Brain Studies I (Poster Session)

Chair: Aviyente, Selin	Michigan State University
Co-Chair: Bach Cuadra, Meritxell	Universitiy of Lausanne

16:00-17:30	SuPbPo-05.1

Stimulus Speech Decoding from Human Cortex with Generative Adversarial Network Transfer Learning, pp. 390-394.

Wang, Ran (NYU), Chen, Xupeng (New York University), Khalilian-Gourtani, Amirhossein (New York University), Chen, Zhaoxi (New York University), Yu, Leyao (NYU School of Medicine), Flinker, Adeen (NYU School of Medicine), Wang, Yao (Polytechnic Institute of New York University)

16:00-17:30	SuPbPo-05.2

Siamese Verification Framework for Autism Identification During Infancy Using Cortical Path Signature Features, pp. 395-398.

Zhang, Xin (South China University of Technology), Ding, Xinyao (South China University of Technology), Wu, Zhengwang (UNC-Chapel Hill), Xia, Jing (Shandong University), Ni, Hao (University College London), Xu, Xiangmin (South China University of Technology), Liao, Lufan (South China University of Technology), Wang, Li (UNC-CHAPEL HILL), Li, Gang (University of North Carolina at Chapel Hill)

16:00-17:30	SuPbPo-05.3

BAENET: A Brain Age Estimation Network with 3D Skipping and Outlier Constraint Loss, pp. 399-403.

Qu, Taiping (Jilin University), Yue, Yangming (Deepwise AI Lab), Zhang, Qirui (Department of Medical Imaging, Jinling Hospital, Nanjing Univers), Wang, Cheng (Beijing Deepwise Technology Co.Ltd), Zhang, Zhiqiang (Nanjing University School of Medicine), Lu, Guangming (Department of Medical Imaging, Jinling Hospital, Nanjing Univers), Du, Wei (Jilin University), Li, Xiuli (Deepwise Inc)

16:00-17:30	SuPbPo-05.4

LINEAR MIXED MODELS MINIMISE FALSE POSITIVE RATE and ENHANCE PRECISION of MASS UNIVARIATE VERTEX-WISE ANALYSES of GREY-MATTER, pp. 404-407.

Couvy-Duchesne, Baptiste (Institute for Molecular Bioscience, the University of Queensland), Zhang, Futao (Institute for Molecular Bioscience, the University of Queensland), Kemper, Kathryn (Institute for Molecular Bioscience, the University of Queensland), Sidorenko, Julia (Institute for Molecular Bioscience, the University of Queensland), Wray, Naomi (Institute for Molecular Bioscience, the University of Queensland), Visscher, Peter (Institute for Molecular Bioscience, the University of Queensland), Colliot, Olivier (Cnrs Upr640 - Lena), Yang, Jian (Institute for Molecular Bioscience, the University of Queensland)

16:00-17:30	SuPbPo-05.5

Sex Differences in the Brain: Divergent Results from Traditional Machine Learning and Convolutional Networks, pp. 408-411.

Brueggeman, Leo (University of Iowa), Thomas, Taylor (University of Iowa), Koomar, Tanner (University of Iowa), Hoskins, Brady (University of Iowa), Michaelson, Jacob (University of Iowa)

16:00-17:30	SuPbPo-05.6

Automatic Labeling of Cortical Sulci Using Spherical Convolutional Neural Networks in a Developmental Cohort, pp. 412-415.

Hao, Lingyan (Vanderbilt University), Bao, Shunxing (Vanderbilt University), Tang, Yucheng (Vanderbilt University), Gao, Riqiang (Vanderbilt University), Parvathaneni, Prasanna (National Institutes of Health), Miller, Jacob (University of California Berkeley), Voorhies, Willa (University of California Berkeley), Yao, Jewelia (University of California Berkeley), Bunge, Silvia (University of California Berkeley), Weiner, Kevin (University of California Berkeley), Landman, Bennett (Vanderbilt University), Lyu, Ilwoo (Vanderbilt University)

16:00-17:30	SuPbPo-05.7

A Novel End-To-End Hybrid Network for Alzheimer's Disease Detection Using 3D CNN and 3D CLSTM, pp. 416-419.

Xia, Zaimin (Shenzhen University), Yue, Guanghui (Shenzhen University), Xu, Frank Yanwu (Baidu Online Network Technology (Beijing) Co. Ltd), Feng, Chiyu (Shenzhen University), Yang, Mengya (Shenzhen University), Wang, Tianfu (Shenzhen University), Lei, Baiying (Shenzhen University)

16:00-17:30	SuPbPo-05.8

Brain Age Estimation Using LSTM on Children's Brain MRI, pp. 420-423.

He, Sheng (Boston Children's Hospital, Harvard Medical School), Gollub, Randy (Massachusetts General Hospital, Harvard Medical Schoo), Murph, Shawn Norman (Massachusetts General Hospital, Harvard Medical School), Perez, Juan David (Boston Children's Hospital, Harvard Medical School), Prabhu, Sanjay (Boston Children's Hospital, Harvard Medical School), Pienaar, Rudolph (Boston Children's Hospital), Robertson, Richard L. (Boston Children's Hospital, Harvard Medical Schoo), Grant, Patricia Ellen (Boston Children's Hospital, Harvard Medical School), Ou, Yangming (Boston Children's Hospital, Harvard Medical School)

16:00-17:30	SuPbPo-05.9

Multi-Branch Deformable Convolutional Neural Network with Label Distribution Learning for Fetal Brain Age Prediction, pp. 424-427.

Liao, Lufan (South China University of Technology), Zhang, Xin (South China University of Technology), Zhao, Fenqiang (University of North Carolina at Chapel Hill), Lou, Jingjiao (Shandong Normal University), Wang, Li (UNC-CHAPEL HILL), Xu, Xiangmin (South China University of Technology), Zhang, He (Obstetrics and Gynecology Hospital, Fudan University), Li, Gang (University of North Carolina at Chapel Hill)

SuPbPo-06	Oakdale Foyer Coral Foyer
Segmentation – Methods & Applications I (Poster Session)	

16:00-17:30	SuPbPo-06.1

Leveraging Self-Supervised Denoising for Image Segmentation, pp. 428-432.

Prakash, Mangal (MPI-CBG), Buchholz, Tim-Oliver (CSBD/MPI-CBG), Lalit, Manan (MPI-CBG), Tomancak, Pavel (MPI-CBG), Jug, Florian (MPI-CBG), Krull, Alexander (MPI-CBG)

16:00-17:30	SuPbPo-06.2

Towards Fully Automatic 2d Us to 3d Ct/mr Registration: A Novel Segmentation-Based Strategy, pp. 433-437.

Wei, Wei (University of Magdeburg, Germany), Rak, Marko (University of Magdeburg), Alpers, Julian (University of Magdeburg, Germany), Hansen, Christian (Otto-Von-Guericke-University)

16:00-17:30	SuPbPo-06.3

Deep Learning Framework for Epithelium Density Estimation in Prostate Multi-Parametric Magnetic Resonance Imaging, pp. 438-441.

Kwak, Jin Tae (Sejong University), To, Nguyen Nhat Minh (Sejong University), Xu, Sheng (Philips Research North America), Sankineni, Sandeep (National Cancer Institute, NIH), Turkbey, Baris (Molecular Imaging Program, NCI, NIH), Choyke, Peter (National Institutes of Health), Pinto, Peter (National Institutes of Health), Wood, Bradford (NIH), Merino, Maria (NIH), Moreno, Vanessa (NIH)

16:00-17:30	SuPbPo-06.4

V-Net Light - Parameter-Efficient 3-D Convolutional Neural Network for Prostate MRI Segmentation, pp. 442-445.

Yaniv, Ophir (Tel Aviv University), Portnoy, Orith (Diagnostic Imaging Unit, Sheba Medical Center), Talmon, Amit (Diagnostic Imaging Unit, Sheba Medical Center), Kiryati, Nahum (Tel Aviv University), Konen, Eli (Diagnostic Imaging Unit, Sheba Medical Center), Mayer, Arnaldo (Sheba Medical Center)

16:00-17:30	SuPbPo-06.5

Condensed U-Net (CU-Net): An Improved U-Net Architecture for Cell Segmentation Powered by 4x4 Max-Pooling Layers, pp. 446-450.

Akbaş, Cem Emre (Masaryk University), Kozubek, Michal (Masaryk University)

16:00-17:30	SuPbPo-06.6

AttentionAnatomy: A Unified Framework for Whole-Body Organs at Risk Segmentation Using Multiple Partially Annotated Datasets, pp. 451-455.

Sun, Shanlin (DeepVoxel Inc), Liu, Yang (University of California Irvine), Bai, Narisu (DeepVoxel Inc), Tang, Hao (University of California, Irvine), Chen, Xuming (Department of Radiation Oncology, Shanghai General Hospital, Sha), Huang, Qian (Department of Radiation Oncology, Shanghai General Hospital, Sha), Liu, Yong (Department of Radiation Oncology, Shanghai General Hospital, Sha), Xie, Xiaohui (University of California, Irvine)

16:00-17:30	SuPbPo-06.7

A Spatially Constrained Deep Convolutional Neural Network for Nerve Fiber Segmentation in Corneal Confocal Microscopic Images Using Inaccurate Annotations, pp. 456-460.

Zhang, Ning (University of British Columbia), Francis, Susan (The University of Nottingham), Malik, Rayaz (Weill Cornell Medicine-Qatar), Chen, Xin (University of Nottingham)

SuPbPo-07	Oakdale Foyer Coral Foyer
Histopathology I (Poster Session)	
Chair: Achim, Alin	University of Bristol
Co-Chair: Padfield, Dirk	Google

16:00-17:30	SuPbPo-07.1

SU-Net and DU-Net Fusion for Tumour Segmentation in Histopathology Images, pp. 461-465.

Li, Yilong (Queen Mary University of London), Xu, Zhaoyang (Queen Mary University of London), Wang, Yaqi (Hangzhou Dianzi University), Zhou, Huiyu (University of Leicester), Zhang, Qianni (Queen Mary University of London)

16:00-17:30	SuPbPo-07.2

Histopathologic Cancer Detection by Dense-Attention Network with Incorporation of Prior Knowledge, pp. 466-470.

Liu, Mingyuan (Beihang University), Yu, Yang (Beihang University), Liao, Qingcheng (Beihang University), Zhang, Jicong (Beihang University)

16:00-17:30	SuPbPo-07.3

Learning with Less Data Via Weakly Labeled Patch Classification in Digital Pathology, pp. 471-475.

Teh, Eu Wern (University of Guelph), Taylor, Graham (University of Guelph)

16:00-17:30	SuPbPo-07.4

Cancer Sensitive Cascaded Networks (CSC-Net) for Efficient Histopathology Whole Slide Image Segmentation, pp. 476-480.

Sun, Shujiao (Beihang University), Yuan, Huining (Beihang University), Zheng, Yushan (Beihang University), Zhang, Haopeng (Beihang University), Hu, Dingyi (Beihang University), Jiang, Zhiguo (Beihang University)

16:00-17:30	SuPbPo-07.5

Weakly-Supervised Deep Stain Decomposition for Multiplex IHC Images, pp. 481-485.

Abousamra, Shahira (Stony Brook University), Fassler, Danielle (Stony Brook University), Hou, Le (Stony Brook University), Zhang, Yuwei (Stony Brook University), Gupta, Rajarsi (Stony Brook University Department of Biomedical Informatics), Kurc, Tahsin (Stony Brook University), Escobar-Hoyos, Luisa (Stony Brook University), Samaras, Dimitris (Stony Brook University), Knudsen, Beatrice (Cedars Sinai Medical Center), Shroyer, Kenneth (Stony Brook Medicine), Saltz, Joel (Stony Brook), Chen, Chao (Stony Brook University)

16:00-17:30	SuPbPo-07.6

Mitosis Detection under Limited Annotation: A Joint Learning Approach, pp. 486-489.

Pati, Pushpak (IBM Research Zurich), Foncubierta-Rodríguez, Antonio (IBM Research), Goksel, Orcun (ETH Zurich), Gabrani, Maria (IBM Research-Zurich)

16:00-17:30	SuPbPo-07.7

Signet Ring Cells Detection in Histology Images with Similarity Learning, pp. 490-494.

Sun, Yibao (Queen Mary University of London), Huang, Xingru (Queen Mary University of London), Lopez Molina, Edgar Giussepi (Queen Mary), Dong, Le (University), Zhang, Qianni (Queen Mary University of London)

SuPbPo-08	Oakdale Foyer Coral Foyer

Optical Microscopy and Analysis I (Poster Session)

Chair: Meijering, Erik	University of New South Wales
Co-Chair: Fortun, Denis	CNRS, Université De Strasbourg

16:00-17:30	SuPbPo-08.4

3D Biological Cell Reconstruction with Multi-View Geometry, pp. 495-498.

Lei, Yang (HP Labs), Shkolnikov, Viktor (HP Labs), Xin, Daisy (HP Labs)

16:00-17:30	SuPbPo-08.5

Interacting Convolution with Pyramid Structure Network for Automated Segmentation of Cervical Nuclei in Pap Smear Images, pp. 499-502.

Yang, Xiaoqing (University of Science and Technology of China), Wu, Junmin (University of Science and Technology of China), Yin, Yan (University of Science and Technology of China)

16:00-17:30	SuPbPo-08.6

Stitching Methodology for Whole Slide Low-Cost Robotic Microscope Based on a Smartphone, pp. 503-507.

Ortuño, Juan Enrique (CIBER-BBN, Universidad Politécnica De Madrid), Lin, Lin (Universidad Politécnica De Madrid; Spotlab SL), Ortega, Maria del Pilar (Spotlab, Madrid, Spain), García Villena, Jaime (SpotLab S.L), Cuadrado Sanchez, Daniel (SpotLab), Linares, María (Research Institute Hospital 12 De Octubre, Universidad Compluten), Santos, Andres (Universidad Politecnica Madrid), Ledesma-Carbayo, Maria J. (Universidad Politécnica De Madrid), Luengo-Oroz, Miguel Angel (Universidad Politécnica De Madrid)

16:00-17:30	SuPbPo-08.8

A CNN Framework Based on Line Annotations for Detecting Nematodes in Microscopic Images, pp. 508-512.

Chen, Long (RWTH Aachen University, Aachen, Germany), Strauch, Martin (RWTH Aachen University), Daub, Matthias (Julius Kühn Institute: Federal Research Centre for Cultivated Pl), Jiang, Xiaochen (RWTH Aachen University, Aachen, Germany), Jansen, Marcus (LemnaTec GmbH, Aachen, Germany), Luigs, Hans-Georg (LemnaTec GmbH, Aachen, Germany), Schultz-Kuhlmann, Susanne (LWK Niedersachsen), Kruessel, Stefan (LWK Niedersachsen), Merhof, Dorit (RWTH Aachen University)

16:00-17:30	SuPbPo-08.9

Weakly Supervised Multi-Task Learning for Cell Detection and Segmentation, pp. 513-516.

Chamanzar, Alireza (Carnegie Mellon University), Nie, Yao (Roche Tissue Diagnostics)

16:00-17:30	SuPbPo-08.10

When Texture Matters: Texture-Focused CNNs Outperform General Data Augmentation and Pretraining in Oral Cancer Detection, pp. 517-521.

Wetzer, Elisabeth (Uppsala University), Gay, Jo (Uppsala University), Harlin, Hugo (Umeå University), Lindblad, Joakim (Uppsala University), Sladoje, Nataša (Centre for Image Analysis, Uppsala University)

16:00-17:30	SuPbPo-08.11

Automated Quantitative Analysis of Microglia in Bright-Field Images of Zebrafish, pp. 522-525.

Geurts, Samuël (Delft University of Technology), Oosterhof, Nynke (University Medical Center Groningen), Kuil, Laura (Erasmus MC), van der Linde, Herma (Erasmus University Medical Center), van Ham, Tjakko (Erasmus University Medical Center), Meijering, Erik (University of New South Wales)

16:00-17:30	SuPbPo-08.12

Three Dimensional Nuclei Segmentation and Classification of Fluorescence Microscopy Images, pp. 526-530.

Han, Shuo (Purdue University), Lee, Soonam (Purdue University), Chen, Alain (Purdue University), Yang, Changye (Purdue University), Salama, Paul (Indiana University-Purdue University), Dunn, Kenneth (Indiana University), Delp, Edward (Purdue University)

SuPcPl	Coral ABC

Sunday Topical Plenaries (Plenary)

Chair: Greenspan, Hayit K.	Tel Aviv University
Co-Chair: Liebling, Michael	Idiap Research Institute

17:30-17:50	SuPcPl.1

Whole Slide Imaging Meets AI/ML, a Pathologists View from the Trenches, N/A.

Feldman, Michael (University of Pennsylvania)

17:50-18:10	SuPcPl.2

Artificial Intelligence and Computational Pathology: Implications for Precision Medicine, N/A.

Madabhushi, Anant (Case Western Reserve University)

Technical Program for Monday April 6, 2020

MoAaO1 — Oakdale I-II
FMRI Analysis (Oral Session)

09:00-09:15 — MoAaO1.1

Diffeomorphic Smoothing for Retinotopic Mapping, pp. 534-538.

Tu, Yanshuai (Arizona State University), Ta, Duyan (Arizona State University), Lu, Zhonglin (New York Univ), Wang, Yalin (Arizona State University)

09:15-09:30 — MoAaO1.2

Improved Functional MRI Activation Mapping in White Matter through Diffusion-Adapted Spatial Filtering, pp. 539-543.

Abramian, David (Linköping University), Larsson, Martin (Lund University, Combain Mobile AB), Eklund, Anders (Linköping University), Behjat, Hamid (Lund University)

09:30-09:45 — MoAaO1.3

A Network-Based Approach to Study of ADHD Using Tensor Decomposition of Resting State fMRI Data, pp. 544-548.

Li, Jian (University of Southern California), Joshi, Anand (University of Southern California), Leahy, Richard (USC)

09:45-10:00 — MoAaO1.4

Dynamics of Brain Activity Captured by Graph Signal Processing of Neuroimaging Data to Predict Human Behaviour, pp. 549-553.

Bolton, Thomas (EPFL), Van De Ville, Dimitri (EPFL & UniGE)

10:00-10:15 — MoAaO1.5

Deep Variational Autoencoder for Modeling Functional Brain Networks and ADHD Identification, pp. 554-557.

Qiang, Ning (Shaanxi Normal University), Dong, Qinglin (University of Georgia), Sun, Yifei (Shaanxi Normal University), Ge, Bao (Shaanxi Normal University), Liu, Tianming (University of Georgia)

10:15-10:30 — MoAaO1.6

Spectral Characterization of Functional MRI Data on Voxel-Resolution Cortical Graphs, pp. 558-562.

Behjat, Hamid (Lund University), Larsson, Martin (Lund University, Combain Mobile AB)

MoAaO2 — Oakdale III
Disease Quantification and Surgical Planning (Oral Session)

Co-Chair: Kim, Namkug — Asan Medical Center

09:00-09:15 — MoAaO2.1

Jointly Analyzing Alzheimer's Disease Related Structure-Function Using Deep Cross-Model Attention Network, pp. 563-567.

Zhang, Lu (The University of Texas at Arlington), Wang, Li (University of Texas at Arlington, Department of Mathematics), Zhu, Dajiang (University of Texas at Arlington)

09:15-09:30 — MoAaO2.2

Pan-Cancer Prognosis Prediction Using Multimodal Deep Learning, pp. 568-571.

Vale Silva, Luis Andre (Heidelberg University), Rohr, Karl (Heidelberg University, DKFZ Heidelberg)

09:30-09:45 — MoAaO2.3

Learning Amyloid Pathology Progression from Longitudinal PiB-PET Images in Preclinical Alzheimer's Disease, pp. 572-576.

Hao, Wei (University of Wisconsin-Madison), Vogt, Nicholas (University of Wisconsin-Madison), Meng, Zi Hang (University of Wisconsin-Madison), Hwang, Seong Jae (University of Pittsburgh), Koscik, Rebecca (University of Wisconsin-Madison), Johnson, Sterling C. (University of Wisconsin - Madison), Bendlin, Barbara (University of Wisconsin - Madison), Singh, Vikas (University of Wisconsin-Madison)

09:45-10:00 — MoAaO2.4

Patient-Specific Finetuning of Deep Learning Models for Adaptive Radiotherapy in Prostate CT, pp. 577-580.

Elmahdy, Mohamed S. (Leiden University Medical Center), Ahuja, Tanuj (Computer Science and Engineering, Guru Gobind Singh Indraprastha), van der Heide, Uulke A. (The Netherlands Cancer Institute, Amsterdam, the Netherlands), Staring, Marius (LUMC)

10:00-10:15 — MoAaO2.5

Automatic Quantification of Pulmonary Fissure Integrity: A Repeatability Analysis, pp. 581-585.

Althof, Zachary (University of Iowa), Gerard, Sarah E. (Brigham Women's Hospital and Harvard Medical School), Pan, Yue (University of Iowa), Christensen, Gary E. (The University of Iowa), Hoffman, Eric (University of Iowa), Reinhardt, Joseph M. (The University of Iowa)

10:15-10:30 — MoAaO2.6

Spectral Data Augmentation Techniques to Quantify Lung Pathology from CT-Images, pp. 586-590.

Kayal, Subhradeep (Erasmus MC), Dubost, Florian (Erasmus MC - University Medical Center Rotterdam), Tiddens, Harm (Erasmus MC), de Bruijne, Marleen (Erasmus MC - University Medical Center Rotterdam)

MoAaO3 — Oakdale IV-V
Enhancement, Denoising, Deconvolution (Oral Session)

Chair: Blanc-Feraud, Laure — Université Nice Sophia Antipolis, Laboratoire I3S, CNRS, INRIA

Co-Chair: Obara, Boguslaw — University of Durham

09:00-09:15 — MoAaO3.1

Restoration of Marker Occluded Hematoxylin and Eosin Stained Whole Slide Histology Images Using Generative Adversarial Networks, pp. 591-595.

Venkatesh, Bairavi (Merck & Co), Shah, Tosha (Merck), Chen, Antong (Merck & Co., Inc), Ghafurian, Soheil (Merck & Co)

09:15-09:30 — MoAaO3.2

Metal Artifact Reduction and Intra Cochlear Anatomy Segmentation in CT Images of the Ear with a Multi-Resolution Multi-Task 3D Network, pp. 596-599.

Wang, Jianing (Vanderbilt University), Noble, Jack (Vanderbilt University), Dawant, Benoit (Vanderbilt University)

09:30-09:45 — MoAaO3.3

Combining Multimodal Information for Metal Artefact Reduction: An Unsupervised Deep Learning Framework, pp. 600-604.

Ranzini, Marta (University College London), Groothuis, Irme (School of Biomedical & Imaging Sciences, King's College London), Kläser, Kerstin (Medical Physics and Biomedical Engineering Department, Universit), Cardoso, Manuel Jorge (University College London), Henckel, Johann (Royal National Orthopaedic Hospital NHS Trust), Ourselin, Sebastien (University College London), Hart, Alister (Royal National Orthopaedic Hospital NHS Trust), Modat, Marc (King's College London)

09:45-10:00	MoAaO3.4

Deconvolution for Improved Multifractal Characterization of Tissues in Ultrasound Imaging, pp. 605-608.

Wendt, Herwig (CNRS, University of Toulouse), Hourani, Mohamad (University of Toulouse, IRIT/INP-ENSEEIHT), Basarab, Adrian (Université De Toulouse), Kouamé, Denis (Université De Toulouse III, IRIT UMR CNRS 5505)

10:00-10:15	MoAaO3.5

A Physics-Motivated DNN for X-Ray CT Scatter Correction, pp. 609-613.

Iskender, Berk (University of Illinois at Urbana-Champaign), Bresler, Yoram (University of Illinois at Urbana-Champaign)

10:15-10:30	MoAaO3.6

Multi-Cycle-Consistent Adversarial Networks for CT Image Denoising, pp. 614-618.

Liu, Jinglan (University of Notre Dame), Ding, Yukun (University of Notre Dame), Xiong, Jinjun (IBM Thomas J. Watson Research Center), Jia, Qianjun (Guangdong General Hospital), Huang, Meiping (Department of Catheterization Lab, Guangdong Cardiovascular Inst), Zhuang, Jian (Department of Cardiac Surgery, Guangdong Cardiovascular Institut), Xie, Bike (Kneron), Liu, Chun-Chen (Kneron), Shi, Yiyu (University of Notre Dame)

MoAbPo	Oakdale Foyer Coral Foyer
Monday Poster AM (Poster Session)	

10:30-12:00	Sub-session MoAbPo-01

CT Reconstruction Methods
Poster Session, 9 papers

10:30-12:00	Sub-session MoAbPo-02

Image Quantification for Visualization and Surgical Planning
Poster Session, 5 papers

10:30-12:00	Sub-session MoAbPo-03

Image Registration
Poster Session, 10 papers

10:30-12:00	Sub-session MoAbPo-04

Bone and Skeletal Imaging
Poster Session, 6 papers

10:30-12:00	Sub-session MoAbPo-05

Brain Segmentation and Characterization II
Poster Session, 8 papers

10:30-12:00	Sub-session MoAbPo-06

Lung, Chest, and Airways Image Analysis I
Poster Session, 5 papers

10:30-12:00	Sub-session MoAbPo-07

Heart Imaging and Analysis I
Poster Session, 7 papers

10:30-12:00	Sub-session MoAbPo-08

Image Enhancement, Denoising, Deconvolution
Poster Session, 7 papers

10:30-12:00	Sub-session MoAbPo-09

Tracking and Motion Estimation in Microscopy
Poster Session, 4 papers

MoAbPo-01	Oakdale Foyer Coral Foyer
CT Reconstruction Methods (Poster Session)	

Chair: Peyrin, Francoise	Université De Lyon, CNRS UMR 5220, INSERM U1206, INSA Lyon
Co-Chair: Bresler, Yoram	University of Illinois at Urbana-Champaign

10:30-12:00	MoAbPo-01.1

A Completion Network for Reconstruction from Compressed Acquisition, pp. 619-623.

Ducros, Nicolas (INSA Lyon, CREATIS), Lorente Mur, Antonio (INSA Lyon, CREATIS), Peyrin, Francoise (Université De Lyon, CNRS UMR 5220, INSERM U1206, INSA Lyon)

10:30-12:00	MoAbPo-01.2

Gram Filtering and Sinogram Interpolation for Pixel-Basis in Parallel-Beam X-Ray CT Reconstruction, pp. 624-628.

Shu, Ziyu (University of Florida), Entezari, Alireza (University of Florida)

10:30-12:00	MoAbPo-01.3

A New Spatially Adaptive Tv Regularization for Digital Breast Tomosynthesis, pp. 629-633.

Sghaier, Maissa (CVN, CentraleSupélec, Inria, Univ. Paris Saclay, France), Chouzenoux, Emilie (Ligm - Cnrs), Pesquet, Jean-Christophe (CentraleSupélec, INRIA Saclay, University Paris Saclay), Muller, Serge (GE Healthcare)

10:30-12:00	MoAbPo-01.4

Adaptive Prior Patch Size Based Sparse-View CT Reconstruction Algorithm, pp. 634-637.

Zhang, Xinzhen (School of Biomedical Engineering, Shanghai Jiao Tong University), Zhou, Yufu (Shanghai Jiao Tong University), Zhang, Weikang (Shanghai Jiao Tong University), Sun, Jianqi (Shanghai Jiao Tong University), Zhao, Jun (Shanghai Jiao Tong University)

10:30-12:00	MoAbPo-01.5

Unsupervised Cone-Beam Artifact Removal Using CycleGAN and Spectral Blending for Adaptive Radiotherapy, pp. 638-641.

Park, Sangjoon (Korea Advanced Institute of Science and Technology), Ye, Jong Chul (Korea Advanced Inst of Science & Tech)

10:30-12:00	MoAbPo-01.6

Cone-Angle Artifact Removal Using Differentiated Backprojection Domain Deep Learning, pp. 642-645.

Kim, Junyoung (Korea Advanced Inst of Science & Tech), Han, Yoseob (Los Alamos National Laboratory (LANL)), Ye, Jong Chul (Korea Advanced Inst of Science & Tech)

10:30-12:00	MoAbPo-01.7

A List-Mode Osem-Based Attenuation and Scatter Compensation Method for Spect, pp. 646-650.

Rahman, Md Ashequr (Washington University in St. Louis), Laforest, Richard (Washington University Medical School), Jha, Abhinav (Washington University in St. Louis)

10:30-12:00	MoAbPo-01.8

Image-Domain Material Decomposition Using an Iterative Neural Network for Dual-Energy CT, pp. 651-655.

Li, Zhipeng (Shanghai Jiao Tong University), Chun, Il Yong (University of Hawaii at Manoa), Long, Yong (Shanghai Jiao Tong University)

10:30-12:00	MoAbPo-01.9

Digital Breast Tomosynthesis Reconstruction with Deep Neural Network for Improved Contrast and In-Depth Resolution, pp. 656-659.

Wu, Dufan (Massachusetts General Hospital and Harvard Medical School), Kim, Kyungsang (Massachusetts General Hospital and Harvard Medical School), Li, Quanzheng (Harvard Medical School, Massachusetts General Hospital)

MoAbPo-02	Oakdale Foyer Coral Foyer

Image Quantification for Visualization and Surgical Planning (Poster Session)

Chair: Gonzalez Ballester, Miguel Angel	ICREA & Universitat Pompeu Fabra

10:30-12:00	MoAbPo-02.1

Panoramic View of Human Jaw under Ambiguity Intraoral Camera Movement, pp. 660-663.

Ghanoum, Mohamad (Mohamad Ghanoum), Ali, Asem (University of Louisville), Elshazly, Salwa (University of Louisville), Alkabbany, Islam (University of Louisville), Farag, Aly A. (University of Louisville)

10:30-12:00	MoAbPo-02.2

Low-Shot Learning of Automatic Dental Plaque Segmentation Based on Local-To-Global Feature Fusion, pp. 664-668.

Li, Shuai (Beihang University), Pang, Zhennan (Beihang University), Song, Wenfeng (Beihang University), Guo, Yuting (Beihang University), You, Wenzhe (Peking University School and Hospital of Stomatology), Hao, Aimin (School of Computer Science and Engineering, Beihang University), Qin, Hong (StonyBrook University)

10:30-12:00	MoAbPo-02.3

Tooth Segmentation and Labeling from Digital Dental Casts, pp. 669-673.

Sun, Diya (Key Laboratory of Machine Perception (MOE), Department of Machin), Pei, Yuru (Peking University), Song, Guangying (Peking University), Guo, Yuke (Luoyang Institute of Science and Technology), Ma, Gengyu (USens Inc), Xu, Tianmin (Peking University), Zha, Hongbin (Peking University)

10:30-12:00	MoAbPo-02.4

Towards Uncertainty Quantification for Electrode Bending Prediction in Stereotactic Neurosurgery, pp. 674-677.

Granados, Alejandro (King's College London), Lucena, Oeslle (King's College London), Vakharia, Vejay (National Hospital of Neurology and Neurosurgery), Miserocchi, Anna (National Hospital of Neurology and Neurosurgery), McEvoy, Andrew W (National Hospital of Neurology and Neurosurgery), Vos, Sjoerd (University College London), Rodionov, Roman (National Hospital of Neurology and Neurosurgery), Duncan, John S (National Hospital for Neurology and Neurosurgery), Sparks, Rachel (University College of London), Ourselin, Sebastien (University College London)

10:30-12:00	MoAbPo-02.5

A Deep Learning-Facilitated Radiomics Solution for the Prediction of Lung Lesion Shrinkage in Non-Small Cell Lung Cancer Trials, pp. 678-682.

Chen, Antong (Merck & Co., Inc), Saouaf, Jennifer (Merck & Co., Inc), Zhou, Bo (Carnegie Mellon University), Crawford, Randolph (Merck), Yuan, Jianda (Merck & Co., Inc), Ma, Junshui (Merck), Baumgartner, Richard (Merck & Co., Inc), Wang, Shubing (Merck & Co., Inc), Goldmacher, Gregory (Merck & Co., Inc)

MoAbPo-03	Oakdale Foyer Coral Foyer

Image Registration (Poster Session)

Chair: Malandain, Gregoire	INRIA

10:30-12:00	MoAbPo-03.1

Accelerating the Registration of Image Sequences by Spatio-Temporal Multilevel Strategies, pp. 683-686.

Aggrawal, Hari Om (University of Luebeck), Modersitzki, Jan (University of Lubeck)

10:30-12:00	MoAbPo-03.2

Diffeomorphic Registration for Retinotopic Mapping Via Quasiconformal Mapping, pp. 687-691.

Tu, Yanshuai (Arizona State University), Ta, Duyan (Arizona State University), Gu, David Xianfeng (State University of New York at Stony Brook), Lu, Zhonglin (New York Univ), Wang, Yalin (Arizona State University)

10:30-12:00	MoAbPo-03.3

Automatic Multimodal Registration Via Intraprocedural Cone-Beam CT Segmentation Using MRI Distance Maps, pp. 692-695.

Augenfeld, Zachary (Yale University), Lin, MingDe (Visage Imaging, Inc), Chapiro, Julius (Yale University), Duncan, James (Yale University)

10:30-12:00	MoAbPo-03.4

A Generalizable Framework for Domain-Specific Nonrigid Registration: Application to Cardiac Ultrasound, pp. 696-699.

Peoples, Jacob (Queen's University), Ellis, Randy (Queen's University)

10:30-12:00	MoAbPo-03.5

Non-Rigid 2d-3d Registration Using Convolutional Autoencoders, pp. 700-704.

Li, Peixin (Peking University), Pei, Yuru (Peking University), Guo, Yuke (Luoyang Institute of Science and Technology), Ma, Gengyu (USens Inc), Xu, Tianmin (Peking University), Zha, Hongbin (Peking University)

10:30-12:00	MoAbPo-03.6

Liver DCE-MRI Registration Based on Sparse Recovery De-Enhanced Curves, pp. 705-708.

Sun, Yuhang (Southern Medical University), Feng, Qianjin (Southern Medical University)

10:30-12:00	MoAbPo-03.7

Software Tool to Read, Represent, Manipulate, and Apply N-Dimensional Spatial Transforms, pp. 709-712.

Esteban, Oscar (Stanford University), Goncalves, Mathias (Stanford University), Markiewicz, Christopher J. (Stanford University), Ghosh, Satrajit S. (McGovern Institute for Brain Research, MIT and Dept. of Otolaryn), Poldrack, Russell A. (Stanford University)

10:30-12:00	MoAbPo-03.8

An "augmentation-Free" Rotation Invariant Classification Scheme on Point-Cloud and Its Application to Neuroimaging, pp. 713-716.

Yang, Liu (University of California, Berkeley), Chakraborty, Rudrasis (University of California, Berkeley)

10:30-12:00	MoAbPo-03.9

Improving Interpretability of 2-D Ultrasound of the Lumbar Spine, pp. 717-721.

Porto, Lucas (University of British Columbia), Rohling, Robert (UBC)

10:30-12:00	MoAbPo-03.10

Learning Optimal Shape Representations for Multi-Modal Image Registration, pp. 722-725.

Grossiord, Eloise (Institut De Mathématiques De Toulouse), Risser, Laurent (CNRS - Institut De Mathematiques De Toulouse), Ken, Soleakhena (Institut Claudius Regaud, INSERM, UMR825), Kanoun, Salim (IUCT Oncopole), Malgouyres, François (Université De Toulouse)

MoAbPo-04	Oakdale Foyer Coral Foyer

Bone and Skeletal Imaging (Poster Session)

10:30-12:00	MoAbPo-04.1

A Novel Approach to Vertebral Compression Fracture Detection Using Imitation Learning and Patch Based Convolutional Neural Network, pp. 726-730.

Iyer, Sankaran (University of New South Wales), Sowmya, Arcot (University of New South Wales), Blair, Alan (The University of New South Wales), White, Christopher (Prince of Wales Hospital), Dawes, Laughlin (Prince of Wales Hospital), Moses, Daniel (Prince of Wales Hospital)

10:30-12:00	MoAbPo-04.2

Attention-Based CNN for KL Grade Classification: Data from the Osteoarthritis Initiative, pp. 731-735.

Zhang, Bofei (New York University), Tan, Jimin (New York University), Cho, Kyunghyun (New York University), Chang, Gregory (New York University Langone Health), Deniz, Cem (New York University Langone Heath)

10:30-12:00	MoAbPo-04.3

Vertebra-Focused Landmark Detection for Scoliosis Assessment, pp. 736-740.

Yi, Jingru (Rutgers University), Wu, Pengxiang (Rutgers University), Huang, Qiaoying (Rutgers University), Qu, Hui (Rutgers University), Metaxas, Dimitris (Rutgers University)

10:30-12:00	MoAbPo-04.4

Segmentation of Bone Vessels in 3d Micro-Ct Images Using the Monogenic Signal Phase and Watershed, pp. 741-744.

Xu, Hao (Univ Lyon, CNRS UMR 5220, Inserm U1206, INSA Lyon, Université CI), Langer, Max (U. De Lyon, CNRS UMR 5220, Inserm U1044, INSA-Lyon, U. Lyon 1), Peyrin, Francoise (Université De Lyon, CNRS UMR 5220, INSERM U1206, INSA Lyon)

10:30-12:00	MoAbPo-04.5

Back Shape Measurement and Three-Dimensional Reconstruction of Spinal Shape Using One Kinect Sensor, pp. 745-749.

Xu, Zhenda (The Hong Kong Polytechnic University), Zhang, Yong (University of Electronic Science and Technology of China), Fu, Chunyang (University of Electronic Science and Technology of China), Liu, Limin (West China Hospital, Sichuan University), Chen, Cong (The University of Hong Kong), Xu, Wenchao (The Hong Kong Polytechnic University), Guo, Song (The Hong Kong Polytechnic University)

10:30-12:00	MoAbPo-04.6

Towards Shape-Based Knee Osteoarthritis Classification Using Graph Convolutional Networks, pp. 750-753.

von Tycowicz, Christoph (Zuse Institute Berlin)

MoAbPo-05	Oakdale Foyer Coral Foyer

Brain Segmentation and Characterization II (Poster Session)

Chair: Caballero Gaudes, Cesar	Basque Center on Cognition, Brain and Language
Co-Chair: Guevara, Pamela	Universidad De Concepción

10:30-12:00	MoAbPo-05.1

Topology Highlights Neural Deficits of Post-Stroke Aphasia Patients, pp. 754-757.

Wang, Yuan (University of South Carolina), Behroozmand, Roozbeh (University of South Carolina), Johnson, Lorelei Phillip (University of South Carolina), Fridriksson, Julius (University of South Carolina)

10:30-12:00	MoAbPo-05.2

Automatic Brain Organ Segmentation with 3d Fully Convolutional Neural Network for Radiation Therapy Treatment Planning, pp. 758-762.

Duanmu, Hongyi (Stony Brook University), Kim, Jinkoo (Stony Brook University Hospital), Kanakaraj, Praitayini (Vanderbilt University), Wang, Andrew Haitian (Stony Brook University), Joshua, John (Stony Brook University), Kong, Jun (Georgia State University), Wang, Fusheng (Stony Brook University)

10:30-12:00	MoAbPo-05.3

Wnet: An End-To-End Atlas-Guided and Boundary-Enhanced Network for Medical Image Segmentation, pp. 763-766.

Huang, Huimin (Zhejiang University), Lin, Lanfen (Zhejiang University), Tong, Ruofeng (Zhejiang University), Hu, Hongjie (Sir Run Run Shaw Hospital), Zhang, Qiaowei (Sir Run Run Shaw Hospital, Zhejiang University), Iwamoto, Yutaro (Ritsumeikan University), Han, Xianhua (Ritsumeikan University), Chen, Yen-Wei (Ritsumeikan University), Wu, Jian (Zhejiang University)

10:30-12:00	MoAbPo-05.4

Learning Probabilistic Fusion of Multilabel Lesion Contours, pp. 767-771.

Cohen, Gal (Tel-Aviv University), Greenspan, Hayit K. (Tel Aviv University), Goldberger, Jacob (Bar-Ilan University)

10:30-12:00	MoAbPo-05.5

Segmentation-Based Method Combined with Dynamic Programming for Brain Midline Delineation, pp. 772-776.

Wang, Shen (Peking University), Liang, Kongming (PKU), Pan, Chengwei (Deepwise AI Lab), Ye, Chuyang (Beijing Institute of Technology), Li, Xiuli (Deepwise Inc), Liu, Feng (Deepwise Healthcare), Yu, Yizhou (Deepwise Healthcare), Wang, Yizhou (Peking University)

10:30-12:00	MoAbPo-05.6

Residual Simplified Reference Tissue Model with Covariance Estimation, pp. 777-780.

Kim, Kyungsang (Massachusetts General Hospital and Harvard Medical School), Hong, Inki (Siemens), Son, Young Don (Gachon University), Kim, Jong-Hoon (Gil Medical Center, Gachon University College of Medicine), Li, Quanzheng (Harvard Medical School, Massachusetts General Hospital)

10:30-12:00	MoAbPo-05.7

Scanner Invariant Multiple Sclerosis Lesion Segmentation from MRI, pp. 781-785.

Aslani, Shahab (Istituto Italiano Di Tecnologia (IIT)), Murino, Vittorio (Istituto Italiano Di Tecnologia), Dayan, Michael (Istituto Italiano Di Tecnologia), Tam, Roger (University of British Columbia), Sona, Diego (Istituto Italiano Di Tecnologia (IIT)), Hamarneh, Ghassan (Simon Fraser University)

10:30-12:00	MoAbPo-05.8

Brain Lesion Detection Using a Robust Variational Autoencoder and Transfer Learning, pp. 786-790.

Akrami, Haleh (University of Southern California), Joshi, Anand (University of Southern California), Li, Jian (University of Southern California), Aydore, Sergul (Stevens Institute of Technology), Leahy, Richard (USC)

MoAbPo-06	Oakdale Foyer Coral Foyer

Lung, Chest, and Airways Image Analysis I (Poster Session)

Chair: Soltanian-Zadeh, Hamid	University of Tehran
Co-Chair: Christensen, Gary E.	The University of Iowa

10:30-12:00	MoAbPo-06.1

Classification of Lung Nodules in Ct Volumes Using the Lung-Rads^tm Guidelines with Uncertainty Parameterization, pp. 791-794.

Ferreira, Carlos Alexandre (INESC TEC), Aresta, Guilherme (INESC TEC/FEUP), Pedrosa, João (INESC TEC), Rebelo, João (Department of Radiology, São João Hospital), Negrão, Eduardo (Department of Radiology, São João Hospital), Cunha, António (Universidade De Trás-Os-Montes E Alto Douro & INESC Tecnologia E), Ramos, Isabel (Faculty of Medicine, University of Porto), Campilho, Aurélio (Universidade Do Porto, Instituto De Engenharia Biomédica)

10:30-12:00	MoAbPo-06.2

Deep Feature Disentanglement Learning for Bone Suppression in Chest Radiographs, pp. 795-798.

Lin, Chunze (Tsinghua University), Tang, Ruixiang (Tsinghua University), Lin, Darryl (12 Sigma Technologies), Liu, Langechuan (12Sigma.ai), Lu, Jiwen (Tsinghua University), Chen, Yunqiang (12 Sigma Technologies), Zhou, Jie (Tsinghua University), Gao, Dashan (12 Sigma Technologies)

10:30-12:00	MoAbPo-06.3

Automatic Bounding Box Annotation of Chest X-Ray Data for Localization of Abnormalities, pp. 799-803.

Wu, Joy Tzung-yu (IBM Research - Almaden), Gur, Yaniv (IBM Almaden Research Center), Karargyris, Alexandros (IBM), Bin Syed, Ali (IBM Research), Boyko, Orest (IBM Research), Moradi, Mehdi (IBM Research), Syeda-Mahmood, Tanveer (IBM Almaden Research Center)

10:30-12:00	MoAbPo-06.4

Multimodal Fusion of Imaging and Genomics for Lung Cancer Recurrence Prediction, pp. 804-808.

Subramanian, Vaishnavi (University of Illinois at Urbana-Champaign), Do, Minh (University of Illinois at Urbana-Champaign), Syeda-Mahmood, Tanveer (IBM Almaden Research Center)

10:30-12:00	MoAbPo-06.5

AirwayNet-SE: A Simple-Yet-Effective Approach to Improve Airway Segmentation Using Context Scale Fusion, pp. 809-813.

Qin, Yulei (Shanghai Jiao Tong University), Gu, Yun (Shanghai Jiao Tong University), Zheng, Hao (Shanghai Jiao Tong University), Chen, Mingjian (Institute of Image Processing and Pattern Recognition, Shanghai), Yang, Jie (Shanghai Jiao Tong University), Zhu, Yuemin (CNRS)

MoAbPo-07	Oakdale Foyer Coral Foyer

Heart Imaging and Analysis I (Poster Session)

Chair: Grau, Vicente	University of Oxford
Co-Chair: Frangi, Alejandro	University of Sheffield

10:30-12:00	MoAbPo-07.1

Low-Dose Cardiac-Gated Spect Via a Spatiotemporal Convolutional Neural Network, pp. 814-817.

Song, Chao (Illinois Institute of Technology), Yang, Yongyi (Illinois Institute of Technology), Wernick, Miles (Illinois Institute of Technology), Pretorius, Hendrik (University of Massachusetts Medical School), King, Michael A (University of Massachusetts Medical School)

10:30-12:00	MoAbPo-07.2

Deep Learning for Time Averaged Wall Shear Stress Prediction in Left Main Coronary Bifurcations, pp. 818-821.

Gharleghi, Ramtin (University of New South Wales), Samarasinghe, Gihan (University of New South Wales), Sowmya, Arcot (University of New South Wales), Beier, Susann (University of New South Wales)

10:30-12:00	MoAbPo-07.3

MRI-Based Characterization of Left Ventricle Dyssynchrony with Correlation to CRT Outcomes, pp. 822-825.

Yang, Dong (Rutgers University), Huang, Qiaoying (Rutgers University), Al'Aref, Subhi (Weill Cornell Medicine), Min, James (Weill Cornell Medical College), Axel, Leon (NYU Medical Center), Metaxas, Dimitris (Rutgers University)

10:30-12:00	MoAbPo-07.4

Machine Learning and Graph Based Approach to Automatic Right Atrial Segmentation from Magnetic Resonance Imaging, pp. 826-829.

Regehr, Matthew (University of Alberta), Volk, Andrew James Alexander (University of Alberta), Noga, Michelle (University of Alberta), Punithakumar, Kumaradevan (University of Alberta)

10:30-12:00	MoAbPo-07.5

Automatic Extraction and Sign Determination of Respiratory Signal in Real-Time Cardiac Magnetic Resonance Imaging, pp. 830-833.

Chen, Chong (The Ohio State University), Liu, Yingmin (Ohio State University), Simonetti, Orlando (The Ohio State University), Ahmad, Rizwan (Ohio State University)

10:30-12:00	MoAbPo-07.6

Accelerated Phase Contrast Magnetic Resonance Imaging Via Deep Learning, pp. 834-838.

Nath, Ruponti (University of Louisville), Callahan, Sean (University of Louisville), Singam, Narayana (University of Louisville), Stoddard, Marcus (University of Louisville), Amini, Amir (University of Louisville)

10:30-12:00	MoAbPo-07.7

A One-Shot Learning Framework for Assessment of Fibrillar Collagen from Second Harmonic Generation Images of an Infarcted Myocardium, pp. 839-843.

Liu, Qun (Louisiana State University), Mukhopadhyay, Supratik (Louisiana State University), Rodriguez, Maria Ximena Bastidas (Universidad Nacional De Colombia), Fu, Xing (Louisiana State University), Sahu, Sushant (Louisiana State University), Burk, David (Louisiana State University), Gartia, Manas Ranjan (University of Illinois Urbana Champaign)

MoAbPo-08	Oakdale Foyer Coral Foyer

Image Enhancement, Denoising, Deconvolution (Poster Session)

10:30-12:00	MoAbPo-08.1

Using a Generative Adversarial Network for CT Normalization and Its Impact on Radiomic Features, pp. 844-848.

Wei, Leihao (University of California, Los Angeles), Lin, Yannan (University of California, Los Angeles), Hsu, William (University of California, Los Angeles)

10:30-12:00	MoAbPo-08.2

Adversarial Normalization for Multi Domain Image Segmentation, pp. 849-853.

Pierre-Luc Delisle, Pierre-Luc Delisle (Ecole De Technologie Superieure), Anctil-Robitaille, Benoit (École De Technologie Supérieure), Desrosiers, Christian (École De Technologie Supérieure), Lombaert, Herve (ETS Montreal)

10:30-12:00	MoAbPo-08.3

Blind Deconvolution of Fundamental and Harmonic Ultrasound Images, pp. 854-857.

Hourani, Mohamad (University of Toulouse, IRIT/INP-ENSEEIHT), Basarab, Adrian (Université De Toulouse), Michailovich, Oleg (University of Waterloo), Matrone, Giulia (University of Pavia), Ramalli, Alessandro (University of Florence), Kouamé, Denis (Université De Toulouse III, IRIT UMR CNRS 5505), Tourneret, Jean-Yves (University of Toulouse)

10:30-12:00	MoAbPo-08.4

Bone Structures Extraction and Enhancement in Chest Radiographs Via CNN Trained on Synthetic Data, pp. 858-861.

Gozes, Ophir (Tel Aviv University), Greenspan, Hayit K. (Tel Aviv University)

10:30-12:00	MoAbPo-08.5

Zero-Shot Medical Image Artifact Reduction, pp. 862-866.

Chen, Yu-Jen (National Tsing Hua University), Chang, Yen-Jung (National Tsing Hua University), Wen, Shao-Cheng (National Tsing Hua University), Shi, Yiyu (University of Notre Dame), Xu, Xiaowei (Guangdong General Hospital), Ho, Tsung-Yi (National Tsing Hua University), Jia, Qianjun (Guangdong General Hospital), Huang, Meiping (Department of Catheterization Lab, Guangdong Cardiovascular Inst), Zhuang, Jian (Department of Cardiac Surgery, Guangdong Cardiovascular Institut)

10:30-12:00	MoAbPo-08.6

Robust Algorithm for Denoising of Photon-Limited Dual-Energy Cone Beam CT Projections, pp. 867-871.

Zavala-Mondragon, Luis Albert (Eindhoven University of Technology), van der Sommen, Fons (Eindhoven University of Technology), Ruijters, Daniel (Philips Healthcare), Steinhauser, Heidrun (Philips Healthcare), Engel, Klaus Jurgen (Philips Electronics Netherlands), de With, Peter (Eindhoven University of Technology)

10:30-12:00	MoAbPo-08.7

Deblurring Cataract Surgery Videos Using a Multi-Scale Deconvolutional Neural Network, pp. 872-876.

Ghamsarian, Negin (Klagenfurt University), Taschwer, Mario (Klagenfurt University), Schoeffmann, Klaus (Klagenfurt University)

MoAbPo-09	Oakdale Foyer Coral Foyer
Tracking and Motion Estimation in Microscopy (Poster Session)	
Chair: Munoz-Barrutia, Arrate	Universidad Carlos III De Madrid
Co-Chair: Kozubek, Michal	Masaryk University

10:30-12:00	MoAbPo-09.1

In Silico Prediction of Cell Traction Forces, pp. 877-881.

Pielawski, Nicolas (Uppsala University), Hu, Jianjiang (Karolinska Institutet), Strömblad, Staffan (Karolinska Institutet), Wählby, Carolina (Centre for Image Analysis and Science for Life Laboratory, Uppsa)

10:30-12:00	MoAbPo-09.2

Optimizing Particle Detection by Colocalization Analysis in Multi-Channel Fluorescence Microscopy Images, pp. 882-885.

Ritter, Christian (University of Heidelberg, DKFZ Heidelberg), Newrly, Anne (University of Heidelberg), Schifferdecker, Sandra (University of Heidelberg), Roggenbach, Imme (University of Heidelberg), Müller, Barbara (University of Heidelberg), Rohr, Karl (Heidelberg University, DKFZ Heidelberg)

10:30-12:00	MoAbPo-09.3

Experimentally-Generated Ground Truth for Detecting Cell Types in an Image-Based Immunotherapy Screen, pp. 886-890.

Boyd, Joseph (MINES Paristech), Gouveia, Zelia (Institut Curie), Perez, Franck (Institut Curie), Walter, Thomas (Institut Curie, Mines ParisTech)

10:30-12:00	MoAbPo-09.4

Short Trajectory Segmentation with 1D Unet Framework: Application to Secretory Vesicle Dynamics, pp. 891-894.

Dmitrieva, Mariia (University of Oxford), Lefebvre, Joël (University of Oxford), Delas Penas, Kristofer (University of Oxford), Zenner, Helen (University of Cambridge), Richens, Jennifer (University of Cambridge), St. Johnston, Daniel (University of Cambridge), Rittscher, Jens (University of Oxford)

MoAcPl	Coral ABC
Monday Plenary (Plenary)	
Chair: Sonka, Milan	University of Iowa
Co-Chair: Jacob, Mathews	University of Iowa

12:00-13:00	MoAcPl.1

AI-Enabled Systems in Medical Imaging: USFDA Research and Regulatory Pathways, N/A.

Myers, Kyle (US Food and Drug Administration)

MoPaO1	Oakdale I-II
MRI Reconstruction Methods (Oral Session)	
Chair: Haldar, Justin	University of Southern California
Co-Chair: Fessler, Jeff	Univ. Michigan

14:30-14:45	MoPaO1.1

Substituting Gadolinium in Brain MRI Using DeepContrast, pp. 908-912.

Sun, Haoran (Columbia University), Liu, Xueqing (Columbia University), Feng, Xinyang (Columbia University), Liu, Chen (Columbia University), Zhu, Nanyan (Columbia University), Gjerswold-Selleck, Sabrina Josefina (Columbia University), Wei, Hong-Jian (Columbia University), Upadhyayula, Pavan Shankar (Columbia University), Mela, Angeliki (Columbia University), Wu, Cheng-Chia (Columbia University), Canoll, Peter D. (Columbia University), Laine, Andrew F. (Columbia University), Vaughan, John Thomas (Columbia University), Small, Scott (Columbia University Medical Center), Guo, Jia (Columbia University)

14:45-15:00	MoPaO1.2

Model-Based Deep Learning for Reconstruction of Joint K-Q Under-Sampled High Resolution Diffusion MRI, pp. 913-916.

Mani, Merry (University of Iowa), Aggarwal, Hemant Kumar (University of Iowa), Ghosh, Sanjay (University of Iowa), Jacob, Mathews (University of Iowa)

15:00-15:15	MoPaO1.3

Deep Learning Fast MRI Using Channel Attention in Magnitude Domain, pp. 917-920.

Lee, Joonhyung (KAIST), Kim, Hyunjong (KAIST), Chung, HyungJin (KAIST), Ye, Jong Chul (Korea Advanced Inst of Science & Tech)

15:15-15:30	MoPaO1.4

Self-Supervised Physics-Based Deep Learning MRI Reconstruction without Fully-Sampled Data, pp. 921-925.

Yaman, Burhaneddin (University of Minnesota), Hosseini, Seyed Amir Hossein (University of Minnesota), Moeller, Steen (University of Minnesota), Ellermann, Jutta (University of Minnesota), Ugurbil, Kamil (University of Minnesota), Akcakaya, Mehmet (University of Minnesota)

15:30-15:45	MoPaO1.5

Joint Optimization of Sampling Pattern and Priors in Model-Based Deep Learning, pp. 926-929.

Aggarwal, Hemant Kumar (University of Iowa), Jacob, Mathews (University of Iowa)

15:45-16:00	MoPaO1.6

Adaptive Locally Low Rank and Sparsity Constrained Reconstruction for Accelerated Dynamic Mri, pp. 930-934.

Kafali, Sevgi Gokce (University of California Los Angeles, Los Angeles, CA), Shih, Shu-Fu (University of California, Los Angeles), Ruan, Dan (University of California Los Angeles), Wu, Holden (University of California, Los Angeles)

MoPaO2	Oakdale III
Segmentation Applications and Methods II (Oral Session)	
Chair: Santos, Andres	Universidad Politécnica De Madrid
Co-Chair: Srinivasa, Gowri	PES Institute of Technology, Bangalore South Campus

14:30-14:45	MoPaO2.1

A 3d Cnn with a Learnable Adaptive Shape Prior for Accurate Segmentation of Bladder Wall Using Mr Images, pp. 935-938.

Hammouda, Kamal (Bioengineering Department, University of Louisville), Khalifa, Fahmi (University of Louisville), Soliman, Ahmed (University of Louisville), Abdeltawab, Hisham (Bioengineering Department, University of Louisville), Ghazal, Mohammed (Abu Dhabi University), Abou El-Ghar, Mohamed (University of Mansoura), Haddad, Ahmed (University of Louisville), Darwish, Hannan (Mansoura University), Keynton, Robert (Bioengineering Department, University of Louisville), El-baz, Ayman (University of Louisville)

14:45-15:00	MoPaO2.2

Center-Sensitive and Boundary-Aware Tooth Instance Segmentation and Classification from Cone-Beam CT, pp. 939-942.

Wu, Xiyi (Shanghai Jiao Tong University), Chen, Huai (Shanghai Jiao Tong University), Huang, Yi-Jie (Shanghai Jiao Tong University), Guo, Hua Yan (Shanghai East Hospital Affiliated to Tongji University), Qiu, Tian Tian (Entrusted Dental Clinic), Wang, Lisheng (Shanghai Jiao Tong University)

15:00-15:15	MoPaO2.3

Mask Mining for Improved Liver Lesion Segmentation, pp. 943-947.

Roth, Karsten (HCI/IWR Heidelberg), Hesser, Juergen (Heidelberg University), Konopczynski, Tomasz (Heidelberg University)

15:15-15:30	MoPaO2.4

J Regularization Improves Imbalanced Multiclass Segmentation, pp. 948-952.

Guerrero Pena, Fidel A. (California Institute of Technology), Fernandez, Pedro D. Marrero (Universidade Federal De Pernambuco), Tarr, Paul (California Institute of Technology), Ing Ren, Tsang (Universidade Federal De Pernambuco), Meyerowitz, Elliot M. (California Institute of Technology), Cunha, Alexandre (California Institute of Technology)

15:30-15:45	MoPaO2.5

Evaluating Multi-Class Segmentation Errors with Anatomical Priors, pp. 953-956.

Wang, Xiaoqian (Peking University), Zhang, Qianyi (DeepWise), Zhou, Zhen (Deepwise Inc), Liu, Feng (Deepwise Healthcare), Yu, Yizhou (Deepwise Healthcare), Wang, Yizhou (Peking University)

15:45-16:00	MoPaO2.6

Learning a Loss Function for Segmentation: A Feasibility Study, pp. 957-960.

Moltz, Jan Hendrik (Fraunhofer Institute for Digital Medicine MEVIS), Hänsch, Annika (Fraunhofer Institute for Digital Medicine MEVIS), Lassen-Schmidt, Bianca (Fraunhofer Institute for Digital Medicine MEVIS), Haas, Benjamin (Varian Medical Systems Imaging Laboratory GmbH), Genghi, Angelo (Varian Medical Systems Imaging Laboratory GmbH), Schreier, Jan (Varian Medical Systems Finland Oy), Morgas, Tomasz (Varian Medical Systems), Klein, Jan (Fraunhofer Institute for Digital Medicine MEVIS)

MoPaO3	Oakdale IV-V
Detection, Tracking and Motion Estimation (Oral Session)	
Chair: Larrabide, Ignacio	Pladema-CONICET, UNICEN
Co-Chair: Paul-Gilloteaux, Perrine	CNRS

14:30-14:45	MoPaO3.1

FRR-Net: Fast Recurrent Residual Networks for Real-Time Catheter Segmentation and Tracking in Endovascular Aneurysm Repair, pp. 961-964.

Zhou, Yan-Jie (Institute of Automation, Chinese Academy of Sciences), Xie, Xiao-Liang (Chinese Academy of Sciences), Hou, Zeng-Guang (Institute of Automation, Chinese Academy of Sciences), Bian, Gui-Bin (Institute of Automation, Chinese Academy of Sciences), Liu, Shiqi (The State Key Laboratory of Management and Control for Complex S), Zhou, Xiao-Hu (Institute of Automation, Chinese Academy of Sciences)

14:45-15:00	MoPaO3.2

3D Optical Flow Estimation Combining 3D Census Signature and Total Variation Regularization, pp. 965-968.

Manandhar, Sandeep (Inria), Bouthemy, Patrick (Inria), Welf, Erik (UT Southwestern Medical Center), Roudot, Philippe (UT Southwestern Medical Center), Kervrann, Charles (Inria)

15:00-15:15	MoPaO3.3

Tracking of Particles in Fluorescence Microscopy Images Using a Spatial Distance Model for Brownian Motion, pp. 969-972.

Spilger, Roman (Heidelberg University), Hellgoth, Jonas (Heidelberg University, BioQuant, IPMB), Lee, Ji Young (University of Heidelberg), Hänselmann, Siegfried (Heidelberg University), Herten, Dirk-Peter (Heidelberg University), Bartenschlager, Ralf (University of Heidelberg), Rohr, Karl (Heidelberg University, DKFZ Heidelberg)

15:15-15:30	MoPaO3.4

Nuclei Segmentation Using Mixed Points and Masks Selected from Uncertainty, pp. 973-976.

Qu, Hui (Rutgers University), Yi, Jingru (Rutgers University), Huang, Qiaoying (Rutgers University), Wu, Pengxiang (Rutgers University), Metaxas, Dimitris (Rutgers University)

15:30-15:45	MoPaO3.5

Deep Learning Particle Detection for Probabilistic Tracking in Fluorescence Microscopy Images, pp. 977-980.

Ritter, Christian (University of Heidelberg, DKFZ Heidelberg), Wollmann, Thomas (University of Heidelberg, DKFZ Heidelberg), Lee, Ji Young (University of Heidelberg), Bartenschlager, Ralf (University of Heidelberg), Rohr, Karl (Heidelberg University, DKFZ Heidelberg)

15:45-16:00	MoPaO3.6

Volumetric Landmark Detection with a Multi-Scale Shift Equivariant Neural Network, pp. 981-985.

Ma, Tianyu (Cornell University), Gupta, Ajay (Weill Cornell Medical College, NewYork-Presbyterian Hospital), Sabuncu, Mert (Cornell University)

MoPbPo	Oakdale Foyer Coral Foyer
Monday Poster PM (Poster Session)	

16:00-17:30	Sub-session MoPbPo-01

Brain Connectivity II
Poster Session, 7 papers

16:00-17:30	Sub-session MoPbPo-02

FMRI Analysis I
Poster Session, 8 papers

16:00-17:30	Sub-session MoPbPo-03

MRI Reconstruction Methods I
Poster Session, 8 papers

16:00-17:30	Sub-session MoPbPo-04

Computer-Aided Detection and Diagnosis I
Poster Session, 8 papers

16:00-17:30	Sub-session MoPbPo-05

DL/CNN Methods and Models I
Poster Session, 8 papers

16:00-17:30	Sub-session MoPbPo-06

Segmentation – Methods & Applications II
Poster Session, 9 papers

16:00-17:30	Sub-session MoPbPo-07

Electron Microscopy
Poster Session, 4 papers

16:00-17:30	Sub-session MoPbPo-08

Eye and Retinal Imaging
Poster Session, 10 papers

16:00-17:30	Sub-session MoPbPo-09

Histopathology II
Poster Session, 7 papers

MoPbPo-01	Oakdale Foyer Coral Foyer
Brain Connectivity II (Poster Session)	
Chair: Babadi, Behtash	University of Maryland
Co-Chair: Plourde, Eric	Universite De Sherbrooke

16:00-17:30	MoPbPo-01.1

A Univariate Persistent Brain Network Feature Based on the Aggregated Cost of Cycles from the Nested Filtration Networks, pp. 986-990.

Farazi, Mohammad (Arizona State University), Zhan, Liang (University of Pittsburgh), Lepore, Natasha (USC / Children's Hospital Los Angeles), Thompson, Paul (University of Southern California), Wang, Yalin (Arizona State University)

16:00-17:30	MoPbPo-01.2

Multi Tissue Modelling of Diffusion MRI Signal Reveals Volume Fraction Bias, pp. 991-994.

Frigo, Matteo (Athena Team, Inria Sophia-Antipolis Méditerranée), Fick, Rutger H.J. (INRIA), Zucchelli, Mauro (University of Verona), Deslauriers-Gauthier, Samuel (Université Côte d'Azur, Inria, France), Deriche, Rachid (INRIA Sophia Antipolis-Méditerranée)

16:00-17:30	MoPbPo-01.3

Brain Network Connectivity from Matching Cortical Feature Densities, pp. 995-998.

Lee, David (UCLA), Donald, Kirsten Ann (Division of Developmental Paediatrics, Department of Paediatrics), Dalal, Taykhoom (University of California, Los Angeles), Wedderburn, Catherine (London School of Hygiene & Tropical Medicine), Roos, Annerine (Stellenbosh University), Ipser, Jonathan Claude (University of Cape Town), Subramoney,   Sivenesi (Department of Paediatrics and Child Health, University of Cape T), Zar, Heather J. (Department of Paediatrics and Child Health, University of Cape T), Stein, Dan Joseph (University of Cape Town), Narr, Katherine (University of California, Los Angeles), Hellemann, Gerhard (Department of Psychiatry and Biobehavioral Sciences, University), Woods, Roger (University of California, Los Angeles), Joshi, Shantanu (Ahmanson-Lovelace Brain Mapping Center, Department of Neurology,)

16:00-17:30	MoPbPo-01.4

Reinforcement Tractography: A Hybrid Approach for Robust Segmentation of Complex Fiber Bundles, pp. 999-1003.

Cabeen, Ryan (University of Southern California), Toga, Arthur (University of Southern California)

16:00-17:30	MoPbPo-01.5

Modeling the Topology of Cerebral Microvessels Via Geometric Graph Contraction, pp. 1004-1008.

Damseh, Rafat (Polytechnique Montreal), Cheriet, Farida (Ecole Polytechnique of Montreal), Lesage, Frederic (Polytechnique Montreal)

16:00-17:30	MoPbPo-01.6

Characterizing Frequency-Selective Network Vulnerability for Alzheimer's Disease by Identifying Critical Harmonic Patterns, pp. 1009-1012.

Leinwand, Benjamin (University of North Carolina at Chapel Hill), Wu, Guorong (University of North Carolina at Chapel Hill), Pipiras, Vladas (University of North Carolina at Chapel Hill)

16:00-17:30	MoPbPo-01.7

A Computational Diffusion Mri Framework for Biomarker Discovery in a Rodent Model of Post-Traumatic Epileptogenesis, pp. 1013-1017.

Cabeen, Ryan (Keck School of Medicine of USC), Immonen, Riikka (University of Eastern Finland), Harris, Neil G (UCLA), Grohn, Olli (University of Eastern Finland), Smith, Gregory (UCLA), Manninen, Eppu (University of Eastern Finland), Garner, Rachael (University of Southern California), Duncan, Dominique (Yale University), Pitkanen, Asla (University of Eastern Finland), Toga, Arthur (University of Southern California)

MoPbPo-02	Oakdale Foyer Coral Foyer
FMRI Analysis I (Poster Session)	
Chair: Caruyer, Emmanuel	Univ Rennes, Inria, CNRS, IRISA

16:00-17:30	MoPbPo-02.1

Impact of 1D and 2D Visualisation on EEG-fMRI Neurofeedback Training During a Motor Imagery Task, pp. 1018-1021.

Cury, Claire (Inria Rennes), Lioi, Giulia (INRIA, Univ Rennes1), Perronnet, Lorraine (Sword), Lécuyer, Anatole (IRISA-INRIA Rennes), Maurel, Pierre (Université De Rennes 1), Barillot, Christian (Irisa (umr Cnrs 6074), Inria, Inserm)

16:00-17:30	MoPbPo-02.2

Architectural Hyperparameters, Atlas Granularity and Functional Connectivity with Diagnostic Value in Autism Spectrum Disorder, pp. 1022-1025.

Mellema, Cooper (University of Texas Southwestern Medical Center), Treacher, Alex (University of Texas Southwestern Medical Center), Nguyen, Kevin (UT Southwestern), Montillo, Albert (UT Southwestern)

16:00-17:30	MoPbPo-02.3

Anatomically Informed Bayesian Spatial Priors for fMRI Analysis, pp. 1026-1030.

Abramian, David (Linköping University), Sidén, Per (Linköping University), Knutsson, Hans (Linköping University), Villani, Mattias (Linköping University), Eklund, Anders (Linköping University)

16:00-17:30	MoPbPo-02.4

Dynamic Missing-Data Completion Reduces Leakage of Motion Artifact Caused by Temporal Filtering That Remains after Scrubbing, pp. 1031-1034.

Guler, Seyhmus (Northeastern University), Erem, Burak (Boston Children's Hospital and Harvard Medical School), Afacan, Onur (Harvard Medical School), Cohen, Alexander, L. (Washington Univ. in St. Louis), Warfield, Simon K. (Harvard Medical School)

16:00-17:30	MoPbPo-02.5

A Temporal Model for Task-Based Functional MR Images, pp. 1035-1038.

Lin, Claire Yilin (University of Michigan), Noll, Douglas C. (University of Michigan), Fessler, Jeff (Univ. Michigan)

16:00-17:30	MoPbPo-02.6

Learning Latent Structure Over Deep Fusion Model of Mild Cognitive Impairment, pp. 1039-1043.

Wang, Li (University of Texas at Arlington, Department of Mathematics), Zhang, Lu (The University of Texas at Arlington), Zhu, Dajiang (University of Texas at Arlington)

16:00-17:30	MoPbPo-02.7

Improved Motion Correction for Functional MRI Using an Omnibus Regression Model, pp. 1044-1047.

Raval, Vyom (The University of Texas at Dallas), Nguyen, Kevin (UT Southwestern), Mellema, Cooper (University of Texas Southwestern Medical Center), Montillo, Albert (UT Southwestern)

16:00-17:30	MoPbPo-02.8

Longitudinal Analysis of Mild Cognitive Impairment Via Sparse Smooth Network and Attention-Based Stacked Bi-Directional Long Short Term Memory, pp. 1048-1051.

Liu, Dongdong (Shenzhen University), Xu, Frank Yanwu (Baidu Online Network Technology (Beijing) Co. Ltd), Elazab, Ahmed (Shenzhen University), Yang, Peng (Shenzheng University), Wang, Wei (Shenzhen University), Wang, Tianfu (Shenzhen University), Lei, Baiying (Shenzhen University)

MoPbPo-03	Oakdale Foyer Coral Foyer
MRI Reconstruction Methods I (Poster Session)	

| Chair: Lingala, Sajan Goud | The University of Iowa |
| Co-Chair: Zhao, Bo | MGH/HST Athinoula Martinos Center for Biomedical Imaging, Harvard Medical School |

16:00-17:30	MoPbPo-03.1

Dynamic MRI Using Deep Manifold Self-Learning, pp. 1052-1055.

Ahmed, Abdul Haseeb (University of Iowa), Aggarwal, Hemant Kumar (University of Iowa), Nagpal, Prashant (University of Iowa), Jacob, Mathews (University of Iowa)

16:00-17:30	MoPbPo-03.2

Multi-Scale Unrolled Deep Learning Framework for Accelerated Magnetic Resonance Imaging, pp. 1056-1059.

Nakarmi, Ukash (Stanford University), Cheng, Joseph (Stanford University), Rios, Edgar (Stanford University), Mardani, Morteza (University of Minnesota), John, Pauly (Stanford University), Ying, Leslie (The State University of New York at Buffalo), Vasanawala, Shreyas (Stanford University)

16:00-17:30	MoPbPo-03.3

R-fMRI Reconstruction from K-T Undersampled Simultaneous-Multislice (SMS) MRI with Controlled Aliasing: Towards Higher Spatial Resolution, pp. 1060-1064.

Kulkarni, Prachi H. (Indian Institute of Technology Bombay), Gupta, Kratika (Indian Institute of Techonology Bombay), Merchant, Shabbir (IIT Bombay), Awate, Suyash P (Indian Institute of Technology (IIT), Bombay)

16:00-17:30	MoPbPo-03.4

Convolutional Framework for Accelerated Magnetic Resonance Imaging, pp. 1065-1068.

Zhao, Shen (The Ohio State University), Potter, Lee (The Ohio State University, Dept Electrical & Computer Engineerin), Lee, Kiryung (The Ohio State University), Ahmad, Rizwan (Ohio State University)

16:00-17:30	MoPbPo-03.5

DC-WCNN: A Deep Cascade of Wavelet Based Convolutional Neural Networks for MR Image Reconstruction, pp. 1069-1073.

Ramanarayanan, Sriprabha (Healthcare Technology Innovation Center), Murugesan, Balamurali (Indian Institute of Technology Madras), Sirukarumbur Shanmugaram, Keerthi Ram (IIT Madras), Sivaprakasam, Mohanasankar (Indian Institute of Technology Madras)

16:00-17:30	MoPbPo-03.6

Multi-Echo Recovery with Field Inhomogeneity Compensation Using Structured Low-Rank Matrix Completion, pp. 1074-1077.

Siemonsma, Stephen (University of Iowa), Kruger, Stanley (University of Iowa), Balachandrasekaran, Arvind (University of Iowa), Mani, Merry (University of Iowa), Jacob, Mathews (University of Iowa)

16:00-17:30	MoPbPo-03.7

Fast Automatic Parameter Selection for MRI Reconstruction, pp. 1078-1081.

Toma, Tanjin Taher (University of Virginia), Weller, Daniel (University of Virginia)

16:00-17:30	MoPbPo-03.8

Unsupervised Learning for Compressed Sensing MRI Using CycleGAN, pp. 1082-1085.

Oh, Gyutaek (KAIST), Sim, Byeongsu (KAIST), Ye, Jong Chul (Korea Advanced Inst of Science & Tech)

MoPbPo-04	Oakdale Foyer Coral Foyer
Computer-Aided Detection and Diagnosis I (Poster Session)	

| Chair: Jiang, Xiaoyi | University of Münster |

16:00-17:30	MoPbPo-04.1

Diagnosing Colorectal Polyps in the Wild with Capsule Networks, pp. 1086-1090.

LaLonde, Rodney (University of Central Florida), Kandel, Pujan (Mayo Clinic Jacksonville), Spampinato, Concetto (Universita' Di Catania), Wallace, Michael B. (Mayo Clinic Jacksonville), Bagci, Ulas (University of Central Florida)

16:00-17:30   MoPbPo-04.2

Tensor-Based Grading: A Novel Patch-Based Grading Approach for the Analysis of Deformation Fields, pp. 1091-1095.

Hett, Kilian (Vanderbilt University), Johnson, Hans (The University of Iowa), Coupe, Pierrick (CNRS UMR 5800, Laboratoire Bordelais De Recherche En Informatiqu), Paulsen, Jane (The University of Iowa), Long, Jeffrey D (University of Iowa, Department of Biostatitsics, Iowa City IA, U), Oguz, Ipek (Vanderbilt University)

16:00-17:30   MoPbPo-04.3

Interpreting Medical Image Classifiers by Optimization Based Counterfactual Impact Analysis, pp. 1096-1100.

Major, David (VRVis Center for Virtual Reality and Visualization), Lenis, Dimitrios (VRVis Zentrum Für Virtual Reality Und Visualisierung Forschungs), Wimmer, Maria (VRVis Center for Virtual Reality and Visualization), Sluiter, Gert (VRVis Zentrum Für Virtual Reality Und Visualisierung Forschungs), Berg, Astrid (VRVis Center for Virtual Reality and Visualization), Bühler, Katja (VRVis Center for Virtual Reality and Visualization)

16:00-17:30   MoPbPo-04.4

Visualisation of Medical Image Fusion and Translation for Accurate Diagnosis of High Grade Gliomas, pp. 1101-1105.

Kumar, Nishant (TU Dresden), Hoffmann, Nico (Helmholtz-Zentrum Dresden-Rossendorf), Matthias, Kirsch (Asklepios Kliniken Schildautal Seesen, Abteilung Für Neurochirur), Gumhold, Stefan (TU Dresden)

16:00-17:30   MoPbPo-04.5

Bi-Modal Ultrasound Breast Cancer Diagnosis Via Multi-View Deep Neural Network SVM, pp. 1106-1110.

Gong, Bangming (Shanghai University), Shen, Lu (Shanghai University), Chang, Cai (Fudan University), Zhou, Shichong (Fudan University), Zhou, Weijun (First Affiliated Hospital of USTC), Li, Shuo (Western University), Shi, Jun (Shanghai University)

16:00-17:30   MoPbPo-04.6

Fully Automatic Computer-Aided Mass Detection and Segmentation Via Pseudo-Color Mammograms and Mask R-CNN, pp. 1111-1115.

Min, Hang (University of Queensland), Wilson, Devin (University of Queensland), Huang, Yinhuang (University of Queensland), Liu, Siyu (University of Queensland), Crozier, Stuart (The University of Queensland), Bradley, Andrew Peter (Queensland University of Technology), Chandra, Shekhar (University of Queensland)

16:00-17:30   MoPbPo-04.7

Reading Mammography with Multiple Prior Exams, pp. 1116-1119.

Song, Chao (Illinois Institute of Technology), Sainz de Cea, Maria V. (Illinois Institute of Technology), Richmond, David (IBM Watson Health)

16:00-17:30   MoPbPo-04.8

Analysis of the Influence of Diffeomorphic Normalization in the Prediction of Stable vs Progressive MCI Conversion with Convolutional Neural Networks, pp. 1120-1124.

Ramon-Julvez, Ubaldo (University of Zaragoza), Monica, Hernandez (University of Zaragoza), Mayordomo, Elvira (University of Zaragoza)

MoPbPo-05   Oakdale Foyer Coral Foyer

DL/CNN Methods and Models I (Poster Session)

Chair: Suzuki, Kenji   Illinois Institute of Technology

Co-Chair: Chun, Se Young   Ulsan National Institute of Science and Technology (UNIST)

16:00-17:30   MoPbPo-05.1

Looking in the Right Place for Anomalies: Explainable AI through Automatic Location Learning, pp. 1125-1129.

Kashyap, Satyananda (IBM Research), Karargyris, Alexandros (IBM), Wu, Joy Tzung-yu (IBM Research - Almaden), Gur, Yaniv (IBM Almaden Research Center), Sharma, Arjun (IBM), Wong, Ken C. L. (IBM Research - Almaden Research Center), Moradi, Mehdi (IBM Research), Syeda-Mahmood, Tanveer (IBM Almaden Research Center)

16:00-17:30   MoPbPo-05.2

Deep Learning Based Segmentation of Body Parts in CT Localizers and Application to Scan Planning, pp. 1130-1133.

Deshpande, Hrishikesh (Philips Research, Hamburg, Germany), Bergtholdt, Martin (Philips Research Europe, Hamburg), Gotman, Shlomo (Philips Healthcare), Saalbach, Axel (Philips GmbH, Innovative Technologies), Sénégas, Julien (Philips Research)

16:00-17:30   MoPbPo-05.3

Supervised Augmentation: Leverage Strong Annotation for Limited Data, pp. 1134-1138.

Zheng, Han (Tencent), Shang, Hong (Tencent AI Lab), Sun, Zhongqian (Tencent AI Lab), Fu, Xinghui (Tencent AI Lab), Yao, Jianhua (National Institutes of Health), Huang, Junzhou (University of Texas at Arlington)

16:00-17:30   MoPbPo-05.4

Exploiting "uncertain" Deep Networks for Data Cleaning in Digital Pathology, pp. 1139-1143.

Ponzio, Francesco (Politecnico Di Torino), Giacomo, Deodato (Politecnico Di Torino), Macii, Enrico (Politecnico Di Torino), Di Cataldo, Santa (Politecnico Di Torino), Ficarra, Elisa (Politecnico Di Torino)

16:00-17:30   MoPbPo-05.5

DRU-Net: An Efficient Deep Convolutional Neural Network for Medical Image Segmentation, pp. 1144-1148.

Jafari, Mina (The University of Nottingham), Auer, Dorothee (University of Nottingham), Francis, Susan (The University of Nottingham), Garibaldi, Jon (The University of Nottingham), Chen, Xin (University of Nottingham)

16:00-17:30   MoPbPo-05.6

Object Segmentation with Deep Neural Nets Coupled with a Shape Prior, When Learning from a Training Set of Limited Quality and Small Size, pp. 1149-1153.

Shigwan, Saurabh (Indian Institute of Technology (IIT) Bombay), Gaikwad, Akshay (Indian Institute of Technology, Bombay), Awate, Suyash P (Indian Institute of Technology (IIT), Bombay)

16:00-17:30   MoPbPo-05.7

Robust Detection of Adversarial Attacks on Medical Images, pp. 1154-1158.

Li, Xin (Wayne State University), Zhu, Dongxiao (Wayne State University)

16:00-17:30   MoPbPo-05.8

Self-Supervision vs. Transfer Learning: Robust Biomedical Image Analysis against Adversarial Attacks, pp. 1159-1163.

Anand, Deepak (Indian Institute of Technology Bombay), Tank, Darshan (Indian Institute of Technology Bombay), Tibrewal, Harshvardhan (Indian Institute of Technology Bombay), Sethi, Amit (Indian Institute of Technology Bombay)

MoPbPo-06   Oakdale Foyer Coral Foyer

Segmentation – Methods & Applications II (Poster Session)

Chair: Jeong, Won-Ki	Ulsan National Institute of Science and Technology (UNIST)

16:00-17:30   MoPbPo-06.1

Combining Shape Priors with Conditional Adversarial Networks for Improved Scapula Segmentation in MR Images, pp. 1164-1167.

Boutillon, Arnaud (IMT Atlantique, LaTIM), Borotikar, Bhushan (University of Western Brittany), Burdin, Valerie (IMT Atlantique/Institut Mines Telecom - INSERM U1101), Conze, Pierre-Henri (IMT Atlantique, LaTIM)

16:00-17:30   MoPbPo-06.2

A Generic Ensemble Based Deep Convolutional Neural Network for Semi-Supervised Medical Image Segmentation, pp. 1168-1172.

Li, Ruizhe (The University of Nottingham), Auer, Dorothee (University of Nottingham), Wagner, Christian (University of Nottingham), Chen, Xin (University of Nottingham)

16:00-17:30   MoPbPo-06.3

Hybrid Cascaded Neural Network for Liver Lesion Segmentation, pp. 1173-1177.

Dey, Raunak (University of Georgia), Hong, Yi (University of Georgia)

16:00-17:30   MoPbPo-06.4

Robust Automatic Multiple Landmark Detection, pp. 1178-1182.

Jain, Arjit (Indian Institute of Technology Bombay), Powers, Alexander (The University of Iowa), Johnson, Hans (The University of Iowa)

16:00-17:30   MoPbPo-06.5

Neural Network Segmentation of Cell Ultrastructure Using Incomplete Annotation, pp. 1183-1187.

Francis, John (University of Southern California), Wang, Hongzhi (IBM Almaden Research Center), White, Kate (University of Southern California), Syeda-Mahmood, Tanveer (IBM Almaden Research Center), Stevens, Raymond (University of Southern California)

16:00-17:30   MoPbPo-06.6

Radiomic Feature Stability Analysis Based on Probabilistic Segmentations, pp. 1188-1192.

Haarburger, Christoph (RWTH Aachen University), Schock, Justus (RWTH Aachen University), Truhn, Daniel (University Hospital Aachen), Weitz, Philippe (RWTH Aachen University), Mueller-Franzes, Gustav (RWTH Aachen University), Weninger, Leon (RWTH Aachen University), Merhof, Dorit (RWTH Aachen University)

16:00-17:30   MoPbPo-06.7

Deep Learning and Unsupervised Fuzzy C-Means Based Level-Set Segmentation for Liver Tumor, pp. 1193-1196.

Zhang, Yue (Southern University of Science and Technology), Wu, Jiong (Sun Yat-Sen University), Jiang, Benxiang (Southern University of Science and Technology), Ji, Dongcen (Southern University of Science and Technology), Chen, Yifan (The University of Waikato), Wu, Ed X. (The University of Hong Kong), Tang, Xiaoying (Southern University of Science and Technology)

16:00-17:30   MoPbPo-06.8

Lymphoma Segmentation in PET Images Based on Multi-View and Conv3D Fusion Strategy, pp. 1197-1200.

Hu, Haigen (Zhejiang University of Technology), Shen, Leizhao (Zhejiang University of Technology), Zhou, Tongxue (University of Rouen Normandy, LITIS EA 4108, 76183 Rouen, France), Decazes, Pierre (University of Rouen Normandy, LITIS EA 4108, 76183 Rouen, France), Vera, Pierre (Centre Henri Becquerel), Ruan, Su (Universite De Rouen)

16:00-17:30   MoPbPo-06.9

Liver Guided Pancreas Segmentation, pp. 1201-1204.

Zhang, Yue (Southern University of Science and Technology), Wu, Jiong (Sun Yat-Sen University), Wang, Simao (Southern University of Science and Technology), Liu, Yilong (The University of Hong Kong), Chen, Yifan (The University of Waikato), Wu, Ed X. (The University of Hong Kong), Tang, Xiaoying (Southern University of Science and Technology)

MoPbPo-07   Oakdale Foyer Coral Foyer

Electron Microscopy (Poster Session)

16:00-17:30   MoPbPo-07.1

Adversarial-Prediction Guided Multi-Task Adaptation for Semantic Segmentation of Electron Microscopy Images, pp. 1205-1208.

Yi, Jiajin (Huaqiao University), Yuan, Zhimin (Huaqiao University), Peng, Jialin (Huaqiao University)

16:00-17:30   MoPbPo-07.2

Synaptic Partner Assignment Using Attentional Voxel Association Networks, pp. 1209-1213.

Turner, Nicholas (Princeton University), Lee, Kisuk (Massachusetts Institute of Technology), Lu, Ran (Princeton University), Wu, Jinpeng (Princeton University), Ih, Dodam (Princeton University), Seung, H. Sebastian (Princeton University)

16:00-17:30   MoPbPo-07.3

Caesar: Segment-Wise Alignment Method for Solving Discontinuous Deformations, pp. 1214-1218.

Popovych, Sergiy (Princeton University), Bae, J. Alexander (Princeton University), Seung, H. Sebastian (Princeton University)

16:00-17:30   MoPbPo-07.4

EM-Net: Centerline-Aware Mitochondria Segmentation in EM Images Via Hierarchical View-Ensemble Convolutional Network, pp. 1219-1222.

Yuan, Zhimin (Huaqiao University), Yi, Jiajin (Huaqiao University), Luo, Zhengrong (Huaqiao University), Jia, Zhongdao (Huaqiao University), Peng, Jialin (Huaqiao University)

MoPbPo-08   Oakdale Foyer Coral Foyer

Eye and Retinal Imaging (Poster Session)

Chair: Rohr, Karl	Heidelberg University, DKFZ Heidelberg

16:00-17:30   MoPbPo-08.1

Inception Capsule Network for Retinal Blood Vessel Segmentation and Centerline Extraction, pp. 1223-1226.

Kromm, Christian (University of Heidelberg, DKFZ Heidelberg), Rohr, Karl (Heidelberg University, DKFZ Heidelberg)

16:00-17:30   MoPbPo-08.2

Sparse-GAN: Sparsity-Constrained Generative Adversarial Network for Retinal OCT Image Anomaly Detection, pp. 1227-1231.

Zhou, Kang (ShanghaiTech University), Gao, Shenghua (ShanghaiTech University), Cheng, Jun (Institute of Biomedical Engineering, Chinese Academy of Sciences), Gu, Zaiwang (Southern University of Science and Technology), Fu, Huazhu (Inception Institute of Artificial Intelligence), Tu, Zhi (ShanghaiTech University), Yang, Jianlong (Cixi Institute of Biomedical Engineering, Chinese Academy of Sci), Zhao, Yitian (Chinese Academy of Sciences), Liu, Jiang (Southern University of Science and Technology)

16:00-17:30	MoPbPo-08.3

Learning to Segment Vessels from Poorly Illuminated Fundus Images, pp. 1232-1236.

Nasery, Vibha (Regeneron Pharmaceuticals), Soundararajan, Krishna Bairavi (Carnegie Mellon University), Galeotti, John (Carnegie Mellon University)

16:00-17:30	MoPbPo-08.4

CTF-Net: Retinal Vessel Segmentation Via Deep Coarse-To-Fine Supervision Network, pp. 1237-1241.

Wang, Kun (Chongqing University), Zhang, Xiaohong (Chongqing University), Huang, Sheng (Chongqing University), Wang, Qiuli (Chongqing Univeristy), Chen, Feiyu (Chongqing University)

16:00-17:30	MoPbPo-08.5

Lesion-Aware Segmentation Network for Atrophy and Detachment of Pathological Myopia on Fundus Images, pp. 1242-1245.

Guo, Yan (PingAn Technology (Shenzhen) Co., Ltd., Shenzhen, China), Wang, Rui (PingAn Technology (Shenzhen) Co., Ltd), Zhou, Xia (Ping an Technology (Shenzhen) Co. Ltd., Shenzhen, China), Liu, Yang (PingAn Technology (Shenzhen) Co., Ltd), Wang, Lilong (PingAn Technology), Lv, Chuanfeng (PingAn Tech), Lv, Bin (China Academy of Telecommunication Research of Ministry of Indus), Xie, Guotong (PingAn Tech)

16:00-17:30	MoPbPo-08.6

Retinal Vessel Segmentation by Probing Adaptive to Lighting Variations, pp. 1246-1249.

Noyel, Guillaume (University of Strathclyde), Vartin, Christine (Hospices Civils De Lyon), Boyle, Peter (University of Strathclyde), Kodjikian, Laurent (Croix-Rousse University Hospital, Hospices Civils De Lyon)

16:00-17:30	MoPbPo-08.7

Dense Correlation Network for Automated Multi-Label Ocular Disease Detection with Paired Color Fundus Photographs, pp. 1250-1253.

Li, Cheng (Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzh), Ye, Jin (Shenzhen Institutes of Advanced Technology, Chinese Academy of S), He, Junjun (Shanghai Jiao Tong University), Wang, Shanshan (Shenzhen Institutes of Advanced Technology), Qiao, Yu (Guangdong Key Lab of Computer Vision & Virtual Reality, Shenzhen), Gu, Lixu (Shanghai Jiaotong University)

16:00-17:30	MoPbPo-08.8

A Data-Aware Deep Supervised Method for Retinal Vessel Segmentation, pp. 1254-1257.

Mishra, Suraj (University of Notre Dame), Chen, Danny Z. (University of Notre Dame), Hu, X. Sharon (University of Notre Dame)

16:00-17:30	MoPbPo-08.9

Classification of Ocular Diseases Employing Attention-Based Unilateral and Bilateral Feature Weighting and Fusion, pp. 1258-1261.

He, Junjun (Shanghai Jiao Tong University), Li, Cheng (Paul C. Lauterbur Research Center for Biomedical Imaging, Shenzh), Ye, Jin (Shenzhen Institutes of Advanced Technology, Chinese Academy of S), Wang, Shanshan (Shenzhen Institutes of Advanced Technology), Qiao, Yu (Guangdong Key Lab of Computer Vision & Virtual Reality, Shenzhen), Gu, Lixu (Shanghai Jiaotong University)

16:00-17:30	MoPbPo-08.10

Automatic Classification of Artery/Vein from Single Wavelength Fundus Images, pp. 1262-1265.

Raj, Kevin (Indian Institute of Science, Bangalore, India), M, Aniketh (USC Viterbi, California, USA), Harish Kumar, J. R. (Indian Institute of Science and Manipal Institute of Technology), Seelamantula, Chandra Sekhar (Indian Institute of Science, Bangalore)

MoPbPo-09	Oakdale Foyer Coral Foyer
Histopathology II (Poster Session)	
Chair: Descombes, Xavier	INRIA

16:00-17:30	MoPbPo-09.1

Compact Representation Learning Using Class Specific Convolution Coders - Application to Medical Image Classification, pp. 1266-1270.

Upadhyay, Uddeshya (Indian Institute of Technology (IIT) Bombay), Banerjee, Biplab (Indian Institute of Technology - Bombay)

16:00-17:30	MoPbPo-09.2

An Effective Deep Learning Architecture Combination for Tissue Microarray Spots Classification of H&E Stained Colorectal Images, pp. 1271-1274.

Nguyen, Huu-Giao (Institute of Pathology, University of Bern), Blank, Annika (Institute of Pathology, University of Bern), Lugli, Alessandro (Institute of Pathology, University of Bern), Zlobec, Inti (Institute of Pathology, University of Bern)

16:00-17:30	MoPbPo-09.3

Unsupervised Learning of Contextual Information in Multiplex Immunofluorescence Tissue Cytometry, pp. 1275-1279.

Jiménez-Sánchez, Daniel (Center for Applied Medical Research), Ariz, Mikel (IDISNA, Ciberonc and Solid Tumors and Biomarkers Program, Center), Ortiz-de-Solorzano, Carlos (Centre for Applied Medical Research)

16:00-17:30	MoPbPo-09.4

Weakly-Supervised Balanced Attention Network for Gastric Pathology Image Localization and Classification, pp. 1280-1283.

Zhu, Zhonghang (Xiamen University), Ding, Xin (Zhongshan Hospital Xiamen University), Wang, Liansheng (Xiamen University), Zhang, Defu (Xiamen University)

16:00-17:30	MoPbPo-09.5

Adversarial-Based Domain Adaptation Networks for Unsupervised Tumour Detection in Histopathology, pp. 1284-1288.

Figueira, Gonçalo (Queen Mary University of London), Wang, Yaqi (Hangzhou Dianzi University), Sun, Lingling (Hangzhou Dianzi University), Zhou, Huiyu (University of Leicester), Zhang, Qianni (Queen Mary University of London)

16:00-17:30	MoPbPo-09.6

Microsatellite Instability Prediction of Uterine Corpus Endometrial Carcinoma Based on H&E Histology Whole-Slide Imaging, pp. 1289-1292.

Wang, Tongxin (Indiana University Bloomington), Lu, Weijia (Tencent), Yang, Fan (Tencent AI Lab), Liu, Li (Nanfang Hospital, Southern Medical University), Dong, Zhong-Yi (Nanfang Hospital, Southern Medical University), Tang, Weimin (Tencent Healthcare), Chang, Jia (Tencent), Huan, Wenjing (Tencent Healthcare), Huang, Kun (Indiana University School of Medicine), Yao, Jianhua (National Institutes of Health)

16:00-17:30	MoPbPo-09.7

Region of Interest Identification for Cervical Cancer Images, pp. 1293-1296.

Gupta, Manish (Microsoft), Das, Chetna (Microsoft), Roy, Arnab (SRL Diagnostics), Gupta, Prashant (Microsoft), Pillai, G. Radhakrishna (SRL Diagnostics), Patole, Kamlakar (SRL Diagnostics)

MoPcPl	Coral ABC
Monday Topical Plenaries (Plenary)	
Chair: Liebling, Michael	Idiap Research Institute
Co-Chair: Greenspan, Hayit K.	Tel Aviv University

17:30-17:50	MoPcPl.1

Learning to Solve Inverse Problems in Imaging, N/A.

Willett, Rebecca (University of Wisconsin - Madison)

17:50-18:10	MoPcPl.2

Motile Cilia and Left-Right Symmetry Breaking: From Images to Biological Insights, N/A.

Supatto, Willy (Ecole Polytechnique)

TuAaO1	Oakdale I-II
Machine Learning for Brain Studies (Oral Session)	
Chair: Salvado, Olivier	CSIRO Data61
Co-Chair: Renard, Félix	University of Grenoble

09:00-09:15   TuAaO1.1

3D Mapping of Tau Neurofibrillary Tangle Pathology in the Human Medial Temporal Lobe, pp. 1312-1316.

Yushkevich, Paul (University of Pennsylvania), Iñiguez de Onzoño Martin, María Mercedes (Human Neuroanatomy Laboratory, University of Castilla-La Mancha), Ittyerah, Ranjit (Penn Image Computing and Science Laboratory, Department of Radio), Lim, Sydney (University of Pennsylvania), Lavery, Madigan (University of Pennsylvania), Wang, Jiancong (PICSL Lab, University of Pennsylvannia), Hung, Ling Yu (University of Pennsylvania), Vergnet, Nicolas (University of Pennsylvania), Ravikumar, Sadhana (Penn Image Computing and Science Laboratory, Department of Radio), Xie, Long (Penn Image Computing and Science Laboratory (PICSL), Department), Dong, Mengjin (University of Pennsylvania), DeFlores, Robin (University of Pennsylvania), Cui, Salena (University of Pennsylvania), McCollum, Lauren (University of Pennsylvania), Ohm, Daniel (University of Pennsylvania), Robinson, John (Center for Neurodegenerative Disease Research (CNDR), University), Schuck, Theresa (Center for Neurodegenerative Disease Research (CNDR), University), Grossman, Murray (Department of Neurology, University of Pennsylvania), Tisdall, M. Dylan (University of Pennsylvania), Prabhakaran, Karthik (University of Pennsylvania), Mizsei, Gabor (University of Pennsylvania), Das, Sandhitsu (Department of Neurology, University of Pennsylvania), Artacho Pérula, Emilio (Human Neuroanatomy Laboratory, University of Castilla-La Mancha), Arroyo Jiménez, María del Mar (Human Neuroanatomy Laboratory, University of Castilla-La Mancha), Muñoz López, Mónica (Human Neuroanatomy Laboratory, University of Castilla-La Mancha), Marcos Rabal, María Pilar (Human Neuroanatomy Laboratory, University of Castilla-La Mancha), Molina Romero, Francisco Javier (Human Neuroanatomy Laboratory, University of Castilla-La Mancha), Lee, Edward B (University of Pennsylvania), Trojanowski, John (Center for Neurodegenerative Disease Research (CNDR), University), Wisse, Laura (Penn Image Computing and Science Laboratory, Department of Radio), Wolk, David (Department of Neurology, University of Pennsylvania), Irwin, David J (University of Pennsylvania), Insausti, Ricardo (Human Neuroanatomy Laboratory, University of Castilla-La Mancha)

09:15-09:30   TuAaO1.2

Weakly-Supervised Brain Tumor Classification with Global Diagnosis Label, pp. 1317-1321.

Zhou, Yufan (University at Buffalo, SUNY), Li, Zheshuo (University at Buffalo, SUNY), Ma, Chunwei (University at Buffalo, SUNY), Gao, Mingchen (University at Buffalo, SUNY), Chen, Changyou (University at Buffalo, SUNY), Zhu, Hong (Xuzhou Medical University), Xu, Jinhui (SUNY Buffalo)

09:30-09:45   TuAaO1.3

Encoding Human Cortex Using Spherical CNNs - a Study on Alzheimer's Disease Classification, pp. 1322-1325.

Barbaroux, Hugo (Imperial College London), Feng, Xinyang (Columbia University), Yang, Jie (Columbia University), Laine, Andrew (Columbia University), Angelini, Elsa (Imperial NIHR BRC, Imperial College London)

09:45-10:00   TuAaO1.4

Predicting Longitudinal Cognitive Scores Using Baseline Imaging and Clinical Variables, pp. 1326-1330.

Saboo, Krishnakant (University of Illinois at Urbana-Champaign), Hu, Chang (University of Illinois Urbana-Champaign), Varatharajah, Yogatheesan (University of Illinois at Urbana Champaign), Vemuri, Prashanthi (Mayo Clinic, Rochester), Iyer, Ravishankar (University of Illinois at Urbana-Champaign)

10:00-10:15   TuAaO1.5

Improving Diagnosis of Autism Spectrum Disorder and Disentangling Its Heterogeneous Functional Connectivity Patterns Using Capsule Networks, pp. 1331-1334.

Jiao, Zhicheng (Perelman School of Medicine at University of Pennsylvania), Li, Hongming (University of Pennsylvania), Fan, Yong (University of Pennsylvania)

10:15-10:30   TuAaO1.6

Deep Learning of Cortical Surface Features Using Graph-Convolution Predicts Neonatal Brain Age and Neurodevelopmental Outcome, pp. 1335-1338.

Liu, Mengting (University of Southern California), Duffy, Ben (University of Southern California), Sun, Zhe (University of Southern California), Toga, Arthur (University of Southern California), Barkovich, James (UCSF), Xu, Duan (University of California, San Francisco), Kim, Hosung (University of Southern California)

TuAaO2	Oakdale III
Computer-Aided Detection and Diagnosis (Oral Session)	
Chair: Unay, Devrim	Izmir University of Economics

09:00-09:15   TuAaO2.1

Unsupervised Task Design to Meta-Train Medical Image Classifiers, pp. 1339-1342.

Maicas Suso, Gabriel (The University of Adelaide), Nguyen, Cuong (University of Adelaide), Taghizadeh Motlagh, Farbod (University of Adelaide), Nascimento, Jacinto (Instituto Superior Técnico), Carneiro, Gustavo (University of Adelaide)

09:15-09:30   TuAaO2.2

Uni and Multi-Modal Radiomic Features for the Predicting Prostate Cancer Aggressiveness, pp. 1343-1346.

Jung, Julip (Seoul Women's University), Hong, Helen (Seoul Women's University), Lee, Hansang (KAIST), Hwang, Sung Il (Seoul National Unveristy College of Medicine, Department of Radio), Lee, Hak Jong (Seoul National Unveristy College of Medicine, Department of Radio)

09:30-09:45   TuAaO2.3

Computer-Aided Diagnosis of Congenital Abnormalities of the Kidney and Urinary Tract in Children Using a Multi-Instance Deep Learning Method Based on Ultrasound Imaging Data, pp. 1347-1350.

Yin, Shi (Huazhong University of Science and Technology), Peng, Qinmu (Huazhong University of Science and Technology), Li, Hongming (University of Pennsylvania), Zhang, Zhengqiang (Huazhong University of Science and Technology), You, Xinge (Huazhong University of Science and Technology), Katherine, Fischer (The Children's Hospital of Philadelphia), Furth, Susan (University of Pennsylvania), Tasian, Gregory (The Children's Hospital of Philadelphia), Fan, Yong (University of Pennsylvania)

09:45-10:00   TuAaO2.4

Machine-Learning on Liver Ultrasound to Stratify Multiple Diseases Via Blood-Vessels and Perfusion Characteristics, pp. 1351-1354.

Bayet, Jules (ITMAT Data Science Group, Imperial College London), Hoogenboom, Tim (Imperial College Londonn), Sharma, Rohini (Imperial College London), Angelini, Elsa (Imperial NIHR BRC, Imperial College London)

10:00-10:15	TuAaO2.5

False Positive Reduction Using Multiscale Contextual Features for Prostate Cancer Detection in Multi-Parametric MRI Scans, pp. 1355-1359.

Yu, Xin (Siemens Healthineers), Lou, Bin (Siemens Healthineers), Shi, Bibo (Ohio University), Winkel, David (Siemens Healthineers), Arrahmane, Nacim (Siemens Healthineers), Diallo, Mamadou (Siemens Corporate Technology), Meng, Tongbai (Siemens Healthineers), von Busch, Heinrich (Siemens Healthineers), Grimm, Robert (Siemens Healthineers), Kiefer, Berthold (Siemens Healthineers), Comaniciu, Dorin (Siemens Corporate Research), Kamen, Ali (Siemens Corporation, Corporate Technology), Huisman, Henkjan (Radboud University Medical Center), Rosenkrantz, Andrew (New York University), Penzkofer, Tobias (Charité), Shabunin, Ivan (Patero Clinic), Choi, Moon Hyung (Eunpyeong St. Mary's Hospital), Yang, Qingsong (Changhai Hospital of Shanghai), Szolar, Dieter (Diagnostikum Graz Süd-West,)

10:15-10:30	TuAaO2.6

Polyp Detection in Colonoscopy Videos by Bootstrapping Via Temporal Consistency, pp. 1360-1363.

Ma, Yiting (University of Science and Technology of China), Chen, Xuejin (University of Science and Technology of China), Sun, Bin (Department of Gastroenterology. the First Affiliated Hospital Of)

TuAaO3	Oakdale IV-V
Eye and Vessel Image Analysis (Oral Session)	
Chair: Cheng, Li	University of Alberta, Canada
Co-Chair: Anjos, Andre	Idiap Research Institute

09:00-09:15	TuAaO3.1

ErrorNet: Learning Error Representations from Limited Data to Improve Vascular Segmentation, pp. 1364-1368.

Tajbakhsh, Nima (ASU), Lai, Brian (UCLA), Pundi Ananth, Shilpa (Voxelcloud, Inc), Ding, Xiaowei (VOXELCLOUD INC)

09:15-09:30	TuAaO3.2

Automated Hemorrhage Detection from Coarsely Annotated Fundus Images in Diabetic Retinopathy, pp. 1369-1372.

Huang, Yijin (Southern University of Science and Technology), Lin, Li (School of Electronics and Information Technology, Sun Yat-Sen Un), Li, Meng (State Key Laboratory of Ophthalmology, Zhongshan Ophthalmic Cent), Wu, Jiewei (Sun Yat-Sen University), Cheng, Pujin (Southern University of Science and Technology), Wang, Kai (Sun Yat-Sen University), Yuan, Jin (State Key Laboratory of Ophthalmology, Zhongshan Ophthalmic Cent), Tang, Xiaoying (Southern University of Science and Technology)

09:30-09:45	TuAaO3.3

How to Extract More Information with Less Burden: Fundus Image Classification and Retinal Disease Localization with Ophthalmologist Intervention, pp. 1373-1377.

Meng, Qier (National Institute of Informatics), Hashimoto, Yohei (The University of Tokyo), Satoh, Shin'ichi (National Institute of Informatics)

09:45-10:00	TuAaO3.4

SUNet: A Lesion Regularized Model for Simultaneous Diabetic Retinopathy and Diabetic Macular Edema Grading, pp. 1378-1382.

Tu, Zhi (ShanghaiTech University), Gao, Shenghua (ShanghaiTech University), Zhou, Kang (ShanghaiTech University), Chen, Xianing (ShanghaiTech University), Fu, Huazhu (Inception Institute of Artificial Intelligence), Gu, Zaiwang (Southern University of Science and Technology), Cheng, Jun (Institute of Biomedical Engineering, Chinese Academy of Sciences), Yu, Zehao (ShanghaiTech University), Liu, Jiang (Southern University of Science and Technology)

10:00-10:15	TuAaO3.5

Spatially Informed Cnn for Automated Cone Detection in Adaptive Optics Retinal Images, pp. 1383-1386.

Jin, Heng (Beihang University), Morgan, Jessica (University of Pennsylvania), Gee, James (University of Pennsylvania), Chen, Min (University of Pennsylvania)

10:15-10:30	TuAaO3.6

Automatic Angle-Closure Glaucoma Screening Based on the Localization of Scleral Spur in Anterior Segment Oct, pp. 1387-1390.

Li, Panming (Soochow University, School of Electronic and Information Enginee), Geng, Le (Soochow University, School of Electronic and Information Enginee), Zhu, Weifang (Soochow University), Shi, Fei (Soochow University), Chen, XinJian (Soochow University)

TuAbPo	Oakdale Foyer Coral Foyer
Tuesday Poster AM (Poster Session)	

10:30-12:00	Sub-session TuAbPo-01
FMRI Analysis II	
Poster Session, 9 papers	

10:30-12:00	Sub-session TuAbPo-02
MRI Reconstruction Methods II	
Poster Session, 7 papers	

10:30-12:00	Sub-session TuAbPo-03
Computer-Aided Detection and Diagnosis II	
Poster Session, 7 papers	

10:30-12:00	Sub-session TuAbPo-04
DL/CNN Methods and Models II	
Poster Session, 8 papers	

10:30-12:00	Sub-session TuAbPo-05
Machine Learning, Pattern Recognition Methods	
Poster Session, 8 papers	

10:30-12:00	Sub-session TuAbPo-06
Optical Coherence Tomography I	
Poster Session, 6 papers	

10:30-12:00	Sub-session TuAbPo-07
Optical Microscopy and Analysis II	
Poster Session, 12 papers	

10:30-12:00	Sub-session TuAbPo-08
Videoscopy Processing	
Poster Session, 6 papers	

TuAbPo-01	Oakdale Foyer Coral Foyer
FMRI Analysis II (Poster Session)	
Chair: Preti, Maria Giulia	EPFL / Université De Genève
Co-Chair: Babajani-Feremi, Abbas	The University of Tennessee Health Science Center

10:30-12:00	TuAbPo-01.1

Twin Classification in Resting-State Brain Connectivity, pp. 1391-1394.

Gritsenko, Andrey (Northeastern University), Lindquist, Martin (Johns Hopkins Bloomberg School of Public Health), Chung, Moo K. (University of Wisconsin-Madison)

10:30-12:00	TuAbPo-01.2

Estimating Reproducible Functional Networks Associated with Task Dynamics Using Unsupervised LSTMs, pp. 1395-1398.

Dvornek, Nicha (Yale School of Medicine), Ventola, Pamela (Yale School of Medicine), Duncan, James (Yale University)

10:30-12:00	TuAbPo-01.3

Optimize Cnn Model for Fmri Signal Classification Via Adanet-Based Neural Architecture Search, pp. 1399-1403.

Dai, Haixing (University of Georgia), Ge, Fangfei (Northwestern Polytechnical University), Li, Qing (Beijing Normal University), Zhang, Wei (University of Georgia), Liu, Tianming (University of Georgia)

10:30-12:00	TuAbPo-01.4

A Novel Framework for Grading Autism Severity Using Task-Based Fmri, pp. 1404-1407.

Haweel, Reem (Ain Shamas University), Dekhil, Omar (University of Louisville), Shalaby, Ahmed (University of Louisville), Mahmoud, Ali (University of Louisville), Ghazal, Mohammed (Abu Dhabi University), Khalil, Ashraf (Abu Dhabi University), Keynton, Robert (Bioengineering Department, University of Louisville), Barnes, Gregory (University of Louisville), El-baz, Ayman (University of Louisville)

10:30-12:00	TuAbPo-01.5

Gradient Artifact Correction for Simultaneous Eeg-Fmri Using Denoising Autoencoders, pp. 1408-1411.

Duffy, Ben (University of Southern California), Toga, Arthur (University of Southern California), Kim, Hosung (University of Southern California)

10:30-12:00	TuAbPo-01.6

Volumetric Registration of Brain Cortical Regions by Automatic Landmark Matching and Large Deformation Diffeomorphisms, pp. 1412-1415.

He, Hengda (Columbia University), Razlighi, Qolamreza (Department of Radiology, Weill Cornell Medicine)

10:30-12:00	TuAbPo-01.7

A Novel Spatio-Temporal Hub Identification Method for Dynamic Functional Networks, pp. 1416-1419.

Chen, Anqi (Hangzhou Dianzi University), Yang, Defu (Hangzhou Dianzi University), Yan, Chenggang (Hangzhou Dianzi University), Peng, Ziwen (Shenzhen Kangning Hospital, Shenzhen Mental Health Center), Kim, Minjeong (University of North Carolina at Greensboro), Laurienti, Paul (Wake Forest University Health Sciences), Wu, Guorong (University of North Carolina at Chapel Hill)

10:30-12:00	TuAbPo-01.8

Task Fmri Guided Fiber Clustering Via a Deep Clustering Method, pp. 1420-1423.

Wang, Huan (Shaanxi Normal University), Dong, Qinglin (University of Georgia), Qiang, Ning (Shaanxi Normal University), Zhang, Xin (Northwestern Polytechnical University), Liu, Tianming (University of Georgia), Ge, Bao (Shaanxi Normal University)

10:30-12:00	TuAbPo-01.9

INTERPRETING AGE EFFECTS of HUMAN FETAL BRAIN from SPONTANEOUS fMRI USING DEEP 3D CONVOLUTIONAL NEURAL NETWORKS, pp. 1424-1427.

Li, Xiangrui (Wayne State University), Jasmine Hect, Jasmine Hect (Wayne State University), Thomason, Moriah (Wayne State University), Zhu, Dongxiao (Wayne State University)

TuAbPo-02	Oakdale Foyer Coral Foyer

MRI Reconstruction Methods II (Poster Session)

Chair: Ongie, Greg	University of Chicago

10:30-12:00	TuAbPo-02.1

Calibrationless Parallel Mri Using Model Based Deep Learning (c-Modl), pp. 1428-1431.

Pramanik, Aniket (University of Iowa), Aggarwal, Hemant Kumar (University of Iowa), Jacob, Mathews (University of Iowa)

10:30-12:00	TuAbPo-02.2

Multi-Contrast MR Reconstruction with Enhanced Denoising Autoencoder Prior Learning, pp. 1432-1436.

Liu, Xiangshun (Nanchang University), Zhang, Minghui (Nanchang University), Liu, Qiegen (Department of Electronic Information Engineering, Nanchang Unive), Xiao, Taohui (Paul C. Lauterbur Research Center for Biomedical Imaging, SIAT,), Zheng, Hairong (Shenzhen Inst of Advanced Tech), Ying, Leslie (The State University of New York at Buffalo), Wang, Shanshan (Shenzhen Institutes of Advanced Technology)

10:30-12:00	TuAbPo-02.3

An Evaluation of Regularization Strategies for Subsampled Single-Shell Diffusion MRI, pp. 1437-1440.

Liu, Yunsong (University of Southern California), Liao, Congyu (Massachusetts General Hospital, Harvard Medical School), Setsompop, Kawin (Harvard Medical School), Haldar, Justin (University of Southern California)

10:30-12:00	TuAbPo-02.4

Benchmarking Deep Nets MRI Reconstruction Models on the FastMRI Publicly Available Dataset, pp. 1441-1445.

Ramzi, Zaccharie (CEA), Ciuciu, Philippe (CEA), Starck, Jean-Luc (CEA, IRFU/SEDI/LCS)

10:30-12:00	TuAbPo-02.5

Fast High Dynamic Range MRI by Contrast Enhancement Networks, pp. 1446-1449.

Marques, Matthew (University of Queensland), Engstrom, Craig (University of Queensland), Fripp, Jurgen (CSIRO), Crozier, Stuart (The University of Queensland), Chandra, Shekhar (University of Queensland)

10:30-12:00	TuAbPo-02.6

Arterial Input Function and Tracer Kinetic Model Driven Network for Rapid Inference of Kinetic Maps in Dynamic Contrast Enhanced MRI (AIF-TK-Net), pp. 1450-1453.

Kettelkamp, Joseph (University of Iowa), Lingala, Sajan Goud (The University of Iowa)

10:30-12:00	TuAbPo-02.7

Mr Imaging and Spectroscopy for Biomarker Characterization in Golden Retriever Muscular Dystrophy Tissue Samples, pp. 1454-1458.

Del Bosque, Romina (Vanderbilt University), Valle, Edith (Texas A&M University), Wilcox, Matthew (Texas A&M University), Carrell, Travis (Texas A&M Universiy), Nghiem, Peter (Texas A&M University), Wright, Steven M. (Texas A&M University), McDougall, Mary (Texas A&M University)

TuAbPo-03	Oakdale Foyer Coral Foyer
Computer-Aided Detection and Diagnosis II (Poster Session)	

Chair: de Bruijne, Marleen	Erasmus MC - University Medical Center Rotterdam
Co-Chair: Yang, Yongyi	Illinois Institute of Technology

10:30-12:00   TuAbPo-03.1

DeepMRS: An End-To-End Deep Neural Network for Dementia Disease Detection Using MRS Data, pp. 1459-1463.

Ben Ahmed, Olfa (University of Poitiers), Fezzani, Seifeddine (XLIM), Guillevin, Carole (University of Poitiers), Fezai, Lobna (XLIM), Naudin, Mathieu (University of Poitiers), Gianelli, Benoit (University of Poitiers), Fernandez-Maloigne, Christine (University of Poitiers)

10:30-12:00   TuAbPo-03.2

Efficient Detection of EMVI in Rectal Cancer Via Richer Context Information and Feature Fusion, pp. 1464-1468.

Li, Shuai (Beihang University), Zhang, Zhengdong (Beihang University), Lu, Yun (Qingdao University)

10:30-12:00   TuAbPo-03.3

Stan: Small Tumor-Aware Network for Breast Ultrasound Image Segmentation, pp. 1469-1473.

Shareef, Bryar (University of Idaho), Xian, Min (University of Idaho), Vakanski, Aleksandar (University of Idaho)

10:30-12:00   TuAbPo-03.4

Deep Learning Based Detection of Acute Aortic Syndrome in Contrast CT Images, pp. 1474-1477.

Yellapragada, Manikanta Srikar (New York University), Xie, Yiting (Cornell University), Graf, Benedikt (IBM Watson Health Imaging), Richmond, David (IBM Watson Health), Krishnan, Arun (IBM Watson Health), Sitek, Arkadiusz (IBM Watson Health)

10:30-12:00   TuAbPo-03.5

Semi-Supervised Multi-Domain Multi-Task Training for Metastatic Colon Lymph Node Diagnosis from Abdominal CT, pp. 1478-1481.

Glaser, Saskia (University of Adelaide), Maicas Suso, Gabriel (The University of Adelaide), Bedrikovetski, Sergei (University of Adelaide), Sammour, Tarik (University of Adelaide), Carneiro, Gustavo (University of Adelaide)

10:30-12:00   TuAbPo-03.6

Computer Aided Diagnosis of Clinically Significant Prostate Cancer in Low-Risk Patients on Multi-Parametric Mr Images Using Deep Learning, pp. 1482-1485.

Arif, Muhammad (Erasmus MC, Rotterdam), Schoots, Ivo (Erasmus Medical Center), Castillo T, Jose M. (Erasmus MC - University Medical Center Rotterdam), Robool, Monique (Erasmus MC), Niessen, Wiro (Erasmus MC, University Medical Center Rotterdam), Veenland, Jifke F. (Erasmus MC - University Medical Center Rotterdam)

10:30-12:00   TuAbPo-03.7

Deep Learning Features for Modeling Perceptual Similarity in Microcalcification Lesion Retrieval, pp. 1486-1489.

Wang, Juan (Illinois Institute of Technology), Lei, Liang (Chongqing University of Science and Technology), Yang, Yongyi (Illinois Institute of Technology)

TuAbPo-04	Oakdale Foyer Coral Foyer
DL/CNN Methods and Models II (Poster Session)	

Chair: Acton, Scott	University of Virginia
Co-Chair: Wernick, Miles	Illinois Institute of Technology

10:30-12:00   TuAbPo-04.1

Medical Data Inquiry Using a Question Answering Model, pp. 1490-1493.

Liao, Zhibin (University of Adelaide), Liu, Lingqiao (Australian Institute for Machine Learning, University of Adelaid), Wu, Qi (Australian Institude for Machine Learning, University of Adelaid), Teney, Damien (Australian Institute for Machine Learning, University of Adelaid), Shen, Chunhua (Australian Institute for Machine Learning, University of Adelaid), Hengel, Anton van (University of Adelaide), Verjans, Johan (Australian Institute for Machine Learning)

10:30-12:00   TuAbPo-04.2

Unsupervised Adversarial Correction of Rigid MR Motion Artifacts, pp. 1494-1498.

Armanious, Karim (University of Stuttgart), Tanwar, Aastha (University of Stuttgart), Abdulatif, Sherif (University of Stuttgart), Küstner, Thomas (University of Stuttgart, Germany), Gatidis, Sergios (University of Tübingen), Yang, Bin (Institute of Signal Processing and System Theory, University Of)

10:30-12:00   TuAbPo-04.3

Transforming Intensity Distribution of Brain Lesions Via Conditional GANs for Segmentation, pp. 1499-1502.

Hamghalam, Mohammad (Department of Electrical, Biomedical and Mechatronics Engineerin), Wang, Tianfu (Shenzhen University), Qin, Jing (Center for Smart Health, School of Nursing, the Hong Kong Polyte), Lei, Baiying (Shenzhen University)

10:30-12:00   TuAbPo-04.4

AF-SEG: An Annotation-Free Approach for Image Segmentation by Self-Supervision and Generative Adversarial Network, pp. 1503-1507.

Yu, Fei (Peking University), Dong, Hexin (Peking University), Zhang, Mo (Peking University), Zhao, Jie (Peking University), Dong, Bin (Peking University), Li, Quanzheng (Harvard Medical School, Massachusetts General Hospital), Zhang, Li (Peking University)

10:30-12:00   TuAbPo-04.5

MixModule: Mixed CNN Kernel Module for Medical Image Segmentation, pp. 1508-1512.

Yu, Heng (Tsinghua University), Feng, Xue (University of San Francisco), Wang, Ziwen (Boston University), Sun, Hao (University of Southern California)

10:30-12:00   TuAbPo-04.6

Image Segmentation Using Hybrid Representations, pp. 1513-1516.

Desai, Alakh (International Institute of Information Technology, Hyderabad), Chauhan, Ruchi (International Institute of Information Technology, Hyderabad), Sivaswamy, Jayanthi (International Institute of Information Technology-Hyderabad)

10:30-12:00   TuAbPo-04.7

Mitigating Adversarial Attacks on Medical Image Understanding Systems, pp. 1517-1521.

Paul, Rahul (University of South Florida , Tampa), Schabath, Matthew (H.L.Moffitt Cancer Center & Research Institute, Tampa, Florida), Gillies, Robert (Departments of Diagnostic Radiology and Imaging Research, H. Lee), Hall, Lawrence (University of South Florida), Goldgof, Dmitry (University of South Florida)

10:30-12:00	TuAbPo-04.8

CSAF-CNN: Cross-Layer Spatial Attention Map Fusion Network for Organ-At-Risk Segmentation in Head and Neck CT Images, pp. 1522-1525.

Liu, Zuhao (University of Electronic Science and Technology of China), Wang, Huan (University of Electronic Science and Technology of China, Chengd), Lei, Wenhui (University of Electronic Science and Technology of China), Wang, Guotai (University of Electronic Science and Engineering of China (UESTC)

TuAbPo-05	Oakdale Foyer Coral Foyer
Machine Learning, Pattern Recognition Methods (Poster Session)	
Chair: Amini, Amir	University of Louisville

10:30-12:00	TuAbPo-05.1

Using Transfer Learning and Class Activation Maps Supporting Detection and Localization of Femoral Fractures on Anteroposterior Radiographs, pp. 1526-1529.

Gupta, Vikash (The Ohio State University), Demirer, Mutlu (The Ohio State University), Bigelow, Matthew (Ohio State University), Yu, Sarah (The Ohio State University), Yu, Joseph (The Ohio State University), Prevedello, Luciano (The Ohio State University), White, Richard D (Ohio State University Wexner Medical Center), Erdal, Barbaros (Department of Radiology, the Wexner Medical Center, the Ohio Sta)

10:30-12:00	TuAbPo-05.2

Knowledge Transfer between Datasets for Learning-Based Tissue Microstructure Estimation, pp. 1530-1533.

Qin, Yu (Beijing Institute of Technology), Li, Yuxing (Beijing Institute of Technology), Liu, Zhiwen (Beijing Institute of Technology), Ye, Chuyang (Beijing Institute of Technology)

10:30-12:00	TuAbPo-05.3

Deep Learning Models to Study the Early Stages of Parkinson's Disease, pp. 1534-1537.

Munoz Ramirez, Veronica (Université Grenoble-Alpes), Kmetzsch, Virgilio (Inria), Forbes, Florence (INRIA Jean Kuntzman Laboratory , Grenoble University), Dojat, Michel (INSERM U1216)

10:30-12:00	TuAbPo-05.4

Liver Segmentation in CT with MRI Data: Zero-Shot Domain Adaptation by Contour Extraction and Shape Priors, pp. 1538-1542.

Pham, Duc Duy (University of Duisburg-Essen), Dovletov, Gurbandurdy (University of Duisburg-Essen), Pauli, Josef (Duisburg-Essen, Intelligente Systeme)

10:30-12:00	TuAbPo-05.5

Deep Random Forests for Small Sample Size Prediction with Medical Imaging Data, pp. 1543-1547.

Katzmann, Alexander (Siemens Healthcare GmbH), Mühlberg, Alexander (Siemens Healthcare GmbH), Suehling, Michael (Siemens AG), Noerenberg, Dominik (University Hospital Großhadern, Ludwig-Maximilians-University Mu), Holch, Julian Walter (University Hospital Grohadern, Ludwig-Maximilians-University Mün), Gross, Horst-Michael (University of Technology Ilmenau)

10:30-12:00	TuAbPo-05.6

Modeling Heterogeneity in Feature Selection for MCI Classification, pp. 1548-1551.

Zhu, Wei (University of Rochester), Shi, Feng (Cedars Sinai Medical Center), Luo, Jiebo (University of Rochester)

10:30-12:00	TuAbPo-05.7

Training Liver Vessel Segmentation Deep Neural Networks on Noisy Labels from Contrast CT Imaging, pp. 1552-1555.

Xu, Minfeng (Alibaba), Wang, Yu (Alibaba), Chi, Ying (Alibaba Group), Hua, Xian-Sheng (Alibaba Group)

10:30-12:00	TuAbPo-05.8

Super-Resolution and Self-Attention with Generative Adversarial Network for Improving Malignancy Characterization of Hepatocellular Carcinoma, pp. 1556-1560.

Li, Yunling (Guangzhou University of Chinese Medicine), Huang, Hui (Guangzhou University of Chinese Medicine), Zhang, Lijuan (Shenzhen Institute of Advanced Technology), Wang, Guangyi (Guangdong General Hospital), Zhang, Honglai (Guangzhou University of Chinese Medicine), Zhou, Wu (Guangzhou University of Chinese Medicine)

TuAbPo-06	Oakdale Foyer Coral Foyer
Optical Coherence Tomography I (Poster Session)	
Chair: Marziliano, Pina	Ecole Polytechnique Federale De Lausanne

10:30-12:00	TuAbPo-06.1

Oct Image Quality Evaluation Based on Deep and Shallow Features Fusion Network, pp. 1561-1564.

Wang, Rui (PingAn Technology (Shenzhen) Co., Ltd), Fan, Dongyi (PingAn Technology(ShenZhen)Co., Ltd), Wang, Lilong (PingAn Technology), Lv, Bin (PingAn Technology (Shenzhen) Co., Ltd), Wang, Min (Department of Ophthalmology, Eye and ENT Hospital of Fudan Unive), Zhou, Qienyuan (Optovue, Inc. (Fremont, California, USA)), Lv, Chuanfeng (PingAn Tech), Xie, Guotong (PingAn Tech)

10:30-12:00	TuAbPo-06.2

Noise Redistribution and 3D Shearlet Filtering for Speckle Reduction in Optical Coherence Tomography, pp. 1565-1569.

Hu, Yan (Southern University of Science and Technology), Yang, Jianlong (Cixi Institute of Biomedical Engineering, Chinese Academy of Sci), Cheng, Jun (Institute of Biomedical Engineering, Chinese Academy of Sciences), Liu, Jiang (Southern University of Science and Technology)

10:30-12:00	TuAbPo-06.3

Unsupervised Domain Adaptation for Cross-Device Oct Lesion Detection Via Learning Adaptive Features, pp. 1570-1573.

Yang, Suhui (Ping an technology(Shenzhen) Co.Ltd., Shenzhen, China), Zhou, Xia (Ping an Technology (Shenzhen) Co. Ltd., Shenzhen, China), Jun, Wang (PingAn Techlonogy Co. Ltd), Xie, Guotong (PingAn Tech), Lv, Chuanfeng (PingAn Tech), Gao, Peng (Ping an Technology Co., Ltd), Lv, Bin (PingAn Technology (Shenzhen) Co., Ltd)

10:30-12:00	TuAbPo-06.4

Macular GCIPL Thickness Map Prediction Via Time-Aware Convolutional LSTM, pp. 1574-1578.

Zhiqi, Chen (New York University), Wang, Yao (Polytechnic Institute of New York University), Wollstein, Gadi (Department of Ophthalmology, New York University), Ramos-Cadena, Maria de los Angeles (Department of Ophthalmology, New York University), Schuman, Joel S. (NYU Langone Health, NYU School of Medicine), Ishikawa, Hiroshi (Department of Ophthalmology, New York University)

10:30-12:00	TuAbPo-06.5

Hierarchy-Constrained Network for Corneal Tissue Segmentation Based on Anterior Segment Oct Images, pp. 1579-1582.

Liu, Yang (PingAn Technology (Shenzhen) Co., Ltd), Li, Dongfang (QingDao Eye Hospital of Shandong First Medical University), Guo, Yan (PingAn Technology (Shenzhen) Co., Ltd., Shenzhen, China), Zhou, Xia (Ping an Technology (Shenzhen) Co. Ltd., Shenzhen, China), Dong, Yanling (QingDao Eye Hospital of Shandong First Medical University), Guo, Zhen (Qingdao Eye Hospital of Shandong First Medical University), Xie, Guotong (PingAn Tech), Lv, Chuanfeng (PingAn Tech), Lv, Bin (PingAn Technology (Shenzhen) Co., Ltd)

10:30-12:00	TuAbPo-06.6

Deep Learning for High Speed Optical Coherence Elastography, pp. 1583-1586.

Neidhardt, Maximilian (Hamburg University of Technology), Bengs, Marcel (Hamburg University of Technology), Latus, Sarah (Hamburg University of Technology), Schlüter, Matthias (Hamburg University of Technology), Saathoff, Thore (Hamburg University of Technology), Schlaefer, Alexander (Hamburg University of Technology)

TuAbPo-07	Oakdale Foyer Coral Foyer

Optical Microscopy and Analysis II (Poster Session)

Co-Chair: Jug, Florian	MPI-CBG

10:30-12:00	TuAbPo-07.1

Reservoir Computing for Jurkat T-Cell Segmentation in High Resolution Live Cell Ca^{2+} Fluorescence Microscopy, pp. 1587-1591.

Hadaeghi, Fatemeh (Institute of Computational Neuroscience, Universitätskliniku), Diercks, Björn-Philipp (University Medical Center Hamburg-Eppendorf), Wolf, Insa M. A. (University Medical Center Hamburg-Eppendorf), Werner, René (University Medical Center Hamburg-Eppendorf)

10:30-12:00	TuAbPo-07.2

Enumeration of Ampicillin-Resistant E. Coli in Blood Using Droplet Microfluidics and High-Speed Image Processing, pp. 1592-1595.

Li, Yiyan (Fort Lewis College), Cherukury, Hemanth (University of California - Irvine), Zimak, Jan (University of California - Irvine), Harrison, Jacob (Fort Lewis College), Peterson, Ellena (University of California - Irvine), Zhao, Weian (University of California - Irvine)

10:30-12:00	TuAbPo-07.3

Single-Molecule Localization Microscopy Reconstruction Using Noise2Noise for Super-Resolution Imaging of Actin Filaments, pp. 1596-1599.

Lefebvre, Joël (University of Oxford), Javer, Avelino (University of Oxford), Dmitrieva, Mariia (University of Oxford), Lewkow, Bohdan (University of Cambridge), Allgeyer, Edward (University of Cambridge), Sirinakis, George (University of Cambridge), St. Johnston, Daniel (University of Cambridge), Rittscher, Jens (University of Oxford)

10:30-12:00	TuAbPo-07.4

Ising-GAN: Annotated Data Augmentation with a Spatially Constrained Generative Adversarial Network, pp. 1600-1603.

Dimitrakopoulos, Panagiotis (University of Ioannina), Sfikas, Giorgos (University of Ioannina), Nikou, Christophoros (University of Ioannina)

10:30-12:00	TuAbPo-07.5

ESCELL: Emergent Symbolic Cellular Language, pp. 1604-1607.

Chowdhury, Aritra (GE Research), Kubricht, James (GE Research), Sood Anup, Anup (GE Global Research), Santamaria, Alberto (GE Global Research), Tu, Peter (General Electric)

10:30-12:00	TuAbPo-07.6

Image-Based Simulations of Tubular Network Formation, pp. 1608-1612.

Svoboda, David (Masaryk University), Nečasová, Tereza (Masaryk University)

10:30-12:00	TuAbPo-07.7

Confocal Imaging of Intercellular Calcium in HeLa Cells for Monitoring Drug-Response: Biophysical Framework for Visualization of the Time-Lapse Images, pp. 1613-1616.

Gare, Suman (Indian Institute of Technology Hyderabad), Saxena, Abha (Indian Institute of Technology Hyderabad,), Giri, Lopamudra (Indian Institute of Technology Hyderabad)

10:30-12:00	TuAbPo-07.8

Estimation of Cell Cycle States of Human Melanoma Cells with Quantitative Phase Imaging and Deep Learning, pp. 1617-1621.

Henser-Brownhill, Tristan (University of Manchester), Ju, Robert J. (The University of Queensland Institute for Molecular Bioscience,), Haass, Nikolas K. (The University of Queensland), Stehbens, Samantha J. (The University of Queensland Institute for Molecular Bioscience,), Ballestrem, Christoph (Wellcome Trust Centre for Cell Matrix Research, School of Biolog), Cootes, Timothy F. (Division of Informatics, Imaging & Data Sciences, School of Heal)

10:30-12:00	TuAbPo-07.9

Cramer Rao Inequality, Cauchy-Binet Representation and Structural Optimization of Fluorescence Unmixing Experiment, pp. 1622-1625.

Goun, Alexei (Princeton University)

10:30-12:00	TuAbPo-07.10

Weakly-Supervised Prediction of Cell Migration Modes in Confocal Microscopy Images Using Bayesian Deep Learning, pp. 1626-1629.

Gupta, Anindya (Uppsala University,), Larsson, Veronica Jennie (Karolinska Institutet), Matuszewski, Damian J. (Uppsala University), Strömblad, Staffan (Karolinska Institutet), Wählby, Carolina (Centre for Image Analysis and Science for Life Laboratory, Uppsa)

10:30-12:00	TuAbPo-07.11

Transcriptome-Supervised Classification of Tissue Morphology Using Deep Learning, pp. 1630-1633.

Andersson, Axel (Uppsala University), Partel, Gabriele (Uppsala University), Solorzano Vargas, Leslie Evelyn (Uppsala University), Wählby, Carolina (Centre for Image Analysis and Science for Life Laboratory, Uppsa)

10:30-12:00	TuAbPo-07.12

Extracting Axial Depth and Trajectory Trend Using Astigmatism, Gaussian Fitting, and CNNs for Protein Tracking, pp. 1634-1637.

Delas Penas, Kristofer (University of Oxford), Dmitrieva, Mariia (University of Oxford), Lefebvre, Joël (University of Oxford), Zenner, Helen (University of Cambridge), Allgeyer, Edward (University of Cambridge), Booth, Martin (University of Oxford), St. Johnston, Daniel (University of Cambridge), Rittscher, Jens (University of Oxford)

TuAbPo-08	Oakdale Foyer Coral Foyer

Videoscopy Processing (Poster Session)

Chair: Sage, Daniel	Ecole Polytechnique Federale De Lausanne (EPFL)

10:30-12:00	TuAbPo-08.1

Multi-Frame Ct-Video Registration for 3d Airway-Wall Analysis, pp. 1638-1641.

Byrnes, Patrick (Penn State Erie - the Behrend College), Higgins, William (Penn State University)

| 10:30-12:00 | TuAbPo-08.2 |

Photoshopping Colonoscopy Video Frames, pp. 1642-1646.

LIu, Yuyuan (University of Adelaide), Tian, Yu (University of Adelaide), Maicas Suso, Gabriel (The University of Adelaide), Pu, Leonardo (University of Adelaide), Singh, Rajvinder (University of Adelaide), Verjans, Johan (Australian Institute for Machine Learning), Carneiro, Gustavo (University of Adelaide)

| 10:30-12:00 | TuAbPo-08.3 |

A Deep Learning Approach to Video Fluoroscopic Swallowing Exam Classification, pp. 1647-1650.

Wilhelm, Patrick (University of Iowa), Reinhardt, Joseph M. (The University of Iowa), Van Daele, Douglas (Department of Otolaryngology, Carver College of Medicine)

| 10:30-12:00 | TuAbPo-08.4 |

Recurrent Neural Networks for Compressive Video Reconstruction, pp. 1651-1654.

Lorente Mur, Antonio (INSA Lyon, CREATIS), Peyrin, Francoise (Université De Lyon, CNRS UMR 5220, INSERM U1206, INSA Lyon), Ducros, Nicolas (INSA Lyon, CREATIS)

| 10:30-12:00 | TuAbPo-08.5 |

Reduce False-Positive Rate by Active Learning for Automatic Polyp Detection in Colonoscopy Videos, pp. 1655-1658.

Guo, Zhe (The University of Aizu), Zhang, Ruiyao (The University of Aizu), Li, Qin (The University of Aizu), Liu, Xinkai (The University of Aizu), Nemoto, Daiki (Aizu Medical Center, Fukushima Medical University), Togashi, Kazutomo (Aizu Medical Center, Fukushima Medical University), Niroshana S.M, Isuru (The University of Aizu), Shi, Yuchen (The University of Aizu), Zhu, Xin (The University of Aizu)

| 10:30-12:00 | TuAbPo-08.6 |

Screening for Barrett's Esophagus with Probe-Based Confocal Laser Endomicroscopy Videos, pp. 1659-1663.

Pulido, J. Vince (University of Virginia,), Guleria, Shan (University of Virginia School of Medicine), Ehsan, Lubaina (University of Virginia, School of Medicine, Department of Pediat), Shah, Tilak (Hunter Holmes McGuire VA Medical Center), Syed, Sana (University of Virginia, School of Medicine, Department of Pediat), Brown, Donald (University of Virginia)

TuAcPl	Coral ABC
Tuesday Plenary (Plenary)	
Chair: Sonka, Milan	University of Iowa
Co-Chair: Ye, Jong Chul	Korea Advanced Inst of Science & Tech

| 12:00-13:00 | TuAcPl.1 |

From Biophotonics to MRI: Imaging the Mechanism of Tumor Cell Dissemination During Metastasis, N/A.

Condeelis, John (Albert Einstein College of Medicine)

TuPaO1	Oakdale I-II
Brain Connectivity (Oral Session)	
Chair: Riklin Raviv, Tammy	Ben-Gurion University

| 14:30-14:45 | TuPaO1.1 |

Prediction of Language Impairments in Children Using Deep Relational Reasoning with DWI Data, pp. 1680-1684.

Banerjee, Soumyanil (Wayne State University), Dong, Ming (Wayne State University), Lee, Min-Hee (Wayne State University School of Medicine), O'Hara, Nolan (Wayne State University), Asano, Eishi (Departments of Pediatrics and Neurology, Wayne State University), Jeong, Jeong-Won (Wayne State University School of Medicine)

| 14:45-15:00 | TuPaO1.2 |

Enriching Statistical Inferences on Brain Connectivity for Alzheimer's Disease Analysis Via Latent Space Graph Embedding, pp. 1685-1689.

Ma, Xin (The University of Texas at Arlington), Wu, Guorong (University of North Carolina at Chapel Hill), Kim, Won Hwa (University of Texas at Arlington)

| 15:00-15:15 | TuPaO1.3 |

Mapping Cerebral Connectivity Changes after Mild Traumatic Brain Injury in Older Adults Using Diffusion Tensor Imaging and Riemannian Matching of Elastic Curves, pp. 1690-1693.

Irimia, Andrei (University of Southern California), Fan, Di (University of Southern California), Chaudhari, Nikhil (University of Southern California), Ngo, Van (University of Southern California), Zhang, Fan (Harvard Medical School), Joshi, Shantanu (Ahmanson-Lovelace Brain Mapping Center, Department of Neurology,), O'Donnell, Lauren (BWH)

| 15:15-15:30 | TuPaO1.4 |

Analysis of Consistency in Structural and Functional Connectivity of Human Brain, pp. 1694-1697.

Osmanlioglu, Yusuf (University of Pennsylvania), Antony Alappatt, Jacob (University of Pennsylvania), Parker, Drew (University of Pennsylvania), Verma, Ragini (University of Pennsylvania)

| 15:30-15:45 | TuPaO1.5 |

Functional Multi-Connectivity: A Novel Approach to Assess Multi-Way Entanglement between Networks and Voxels, pp. 1698-1701.

Iraji, Armin (Georgia State University), Lewis, Noah (MIND Institute), Faghiri, Ashkan (University of New Mexico), Fu, Zening (University of Hongkong), DeRamus, Thomas (Tri-Institutional Center for Translational Research in Neuroimag), Abrol, Anees (Georgia State University, the Mind Research Network), Qi, Shile (Brainnetome Center & National Laboratory of Pattern Recognition,), Calhoun, Vince (The Mind Research Network/University of New Mexico)

| 15:45-16:00 | TuPaO1.6 |

Agglomerative Region-Based Analysis, pp. 1702-1705.

Higger, Matt (Harvard Medical School), Wassermann, Demian (Inria), Shenton, Martha (Brigham and Women's Hosptial, Harvard Medical School), Bouix, Sylvain (Psychiatry Neuroimaging Laboratory)

TuPaO2	Oakdale III
Machine Learning and Pattern Recognition Methods (Oral Session)	
Chair: Moradi, Mehdi	IBM Research
Co-Chair: Duan, Qi	NIH

| 14:30-14:45 | TuPaO2.1 |

Class-Center Involved Triplet Loss for Skin Disease Classification on Imbalanced Data, pp. 1706-1710.

Lei, Weixian (Sun Yat-Sen University), Zhang, Rong (Sun Yat-Sen University), Yang, Yang (Sun Yat-Sen University), Wang, Ruixuan (Sun Yat-Sen University), Zheng, Wei-Shi (School of Data and Computer Science, Sun Yat-Sen University)

| 14:45-15:00 | TuPaO2.2 |

Discovering Salient Anatomical Landmarks by Predicting Human Gaze, pp. 1711-1714.

Droste, Richard (University of Oxford), Chatelain, Pierre (University of Oxford), Drukker, Lior (Nuffield Department of Women's and Reproductive Health, Universi), Sharma, Harshita (University of Oxford), Papageorghiou, Aris (Nuffield Department of Obstetrics and Gynaecology, John Ra), Noble, J Alison (University of Oxford)

15:00-15:15	TuPaO2.3

Earthmover-Based Manifold Learning for Analyzing Molecular Conformation Spaces, pp. 1715-1719.

Zelesko, Nathan (Brown University), Moscovich, Amit (Princeton University), Kileel, Joe (Princeton University), Singer, Amit (Princeton University)

15:15-15:30	TuPaO2.4

Semi-Supervised Cervical Dysplasia Classification with Learnable Graph Convolutional Network, pp. 1720-1724.

Ou, Yanglan (Penn State University), Xue, Yuan (Penn State University), Yuan, Ye (Carnegie Mellon University), Xu, Tao (Lehigh University), Pisztora, Vincent (Pennsylvania State University), Li, Jia (The Pennsylvania State University), Huang, Xiaolei (The Pennsylvania State University)

15:30-15:45	TuPaO2.5

Separation of Metabolite and Macromolecule Signals for 1H-MRSI Using Learned Nonlinear Models, pp. 1725-1728.

Li, Yahang (University of Illinois Urbana-Champaign), Wang, Zepeng (University of Illinois at Urbana-Champaign), Lam, Fan (University of Illinois at Urbana Champaign)

15:45-16:00	TuPaO2.6

The Ladder Algorithm: Finding Repetitive Structures in Medical Images by Induction, pp. 1729-1733.

Windsor, Rhydian (University of Oxford), Jamaludin, Amir (Unversity of Oxford)

TuPaO3	Oakdale IV-V
Heart Imaging and Segmentation (Oral Session)	

Chair: Ledesma-Carbayo, Maria J.	Universidad Politécnica De Madrid
Co-Chair: Metaxas, Dimitris	Rutgers University

14:30-14:45	TuPaO3.1

A Semi-Supervised Joint Learning Approach to Left Ventricular Segmentation and Motion Tracking in Echocardiography, pp. 1734-1737.

Ta, Kevinminh (Yale University), Ahn, Shawn (Yale University), Lu, Allen (Yale University), Stendahl, John (Yale University), Sinusas, Albert (Yale University), Duncan, James (Yale University)

14:45-15:00	TuPaO3.2

Efficient Aortic Valve Multilabel Segmentation Using a Spatial Transformer Network, pp. 1738-1742.

Pak, Daniel Hyungseok (Yale University), Caballero, Andres (Georgia Institute of Technology), Sun, Wei (Georgia Institute of Technology), Duncan, James (Yale University)

15:00-15:15	TuPaO3.3

Coronary Wall Segmentation in CCTA Scans Via a Hybrid Net with Contours Regularization, pp. 1743-1747.

Huang, Kaikai (The University of Tokyo), Tejero-de-Pablos, Antonio (The University of Tokyo), Yamane, Hiroaki (The University of Tokyo), Kurose, Yusuke (The University of Tokyo), Iho, Junichi (Sakurabashi Watanabe Hospital), Tokunaga, Youji (Sakurabashi Watanabe Hospital), Horie, Makoto (Sakurabashi Watanabe Hospital), Nishizawa, Keisuke (Sakurabashi Watanabe Hospital), Hayashi, Yusaku (Sakurabashi Watanabe Hospital), Koyama, Yasushi (Sakurabashi Watanabe Hospital), Harada, Tatsuya (The University of Tokyo)

15:15-15:30	TuPaO3.4

Free-Breathing Cardiovascular MRI Using a Plug-And-Play Method with Learned Denoiser, pp. 1748-1751.

Liu, Sizhuo (The Ohio State University), Reehorst, Edward (Ohio State University), Schniter, Philip (The Ohio State University), Ahmad, Rizwan (Ohio State University)

15:30-15:45	TuPaO3.5

Soft-Label Guided Semi-Supervised Learning for Bi-Ventricle Segmentation in Cardiac Cine Mri, pp. 1752-1755.

Chang, Qi (Rutgers University), Yan, Zhennan (Rutgers, the State University of New Jersey), Lou, Yixuan (Rutgers University), Axel, Leon (NYU Medical Center), Metaxas, Dimitris (Rutgers University)

15:45-16:00	TuPaO3.6

Automated Left Atrial Segmentation from Magnetic Resonance Image Sequences Using Deep Convolutional Neural Network with Autoencoder, pp. 1756-1760.

Ghosh, Shrimanti (University of Alberta, Canada), Ray, Nilanjan (University of Alberta), Boulanger, Pierre (University of Alberta), Punithakumar, Kumaradevan (University of Alberta), Noga, Michelle (University of Alberta)

TuPbPo	Oakdale Foyer Coral Foyer
Tuesday Poster PM (Poster Session)	

16:00-17:30	Sub-session TuPbPo-01

Image Synthesis
Poster Session, 11 papers

16:00-17:30	Sub-session TuPbPo-02

Ultrasound Imaging and Analysis II
Poster Session, 9 papers

16:00-17:30	Sub-session TuPbPo-03

Lung, Chest, and Airways Image Analysis II
Poster Session, 10 papers

16:00-17:30	Sub-session TuPbPo-04

Machine Learning for Brain Studies II
Poster Session, 9 papers

16:00-17:30	Sub-session TuPbPo-05

Heart Imaging and Analysis II
Poster Session, 7 papers

16:00-17:30	Sub-session TuPbPo-06

Optical Coherence Tomography II
Poster Session, 6 papers

16:00-17:30	Sub-session TuPbPo-07

Skin Imaging & Analysis
Poster Session, 7 papers

TuPbPo-01	Oakdale Foyer Coral Foyer
Image Synthesis (Poster Session)	

Chair: Goldberger, Jacob	Bar-Ilan University
Co-Chair: Sheet, Debdoot	Indian Institute of Technology Kharagpur

16:00-17:30	TuPbPo-01.1

Generating Controllable Ultrasound Images of the Fetal Head, pp. 1761-1764.

Lok Hin, Lee (University of Oxford), Noble, J Alison (University of Oxford)

16:00-17:30	TuPbPo-01.2

Learning a Self-Inverse Network for Bidirectional MRI Image Synthesis, pp. 1765-1769.

Shen, Zengming (University of Illinois at Urbana Champaign), Chen, Yifan (Zhejiang University), Zhou, Shaohua Kevin (Siemens Corporate Research), Georgescu, Bogdan (Siemens Corporation, Corporate Technology), Liu, Xuqi (University of Miami), Huang, Thomas (UIUC)

16:00-17:30	TuPbPo-01.3

Virtual Staining for Mitosis Detection in Breast Histopathology, pp. 1770-1774.

Mercan, Caner (Radboud University Medical Center), Mooij, Germonda (Radboud University Medical Center, Radboud University), Tellez Martin, David (Radboud University Medical Center), Lotz, Johannes (Fraunhofer MEVIS), Weiss, Nick (Fraunhofer MEVIS), van Gerven, Marcel (Radboud University Nijmegen), Ciompi, Francesco (Radboud University Medical Center)

16:00-17:30	TuPbPo-01.4

3D Conditional Adversarial Learning for Synthesizing Microscopic Neuron Image Using Skeleton-To-Neuron Translation, pp. 1775-1779.

Tang, Zihao (University of Sydney), Zhang, Donghao (University of Sydney), Song, Yang (University of New South Wales), Wang, Heng (The University of Sydney), Liu, Dongnan (The University of Sydney), Zhang, Chaoyi (The University of Sydney), Liu, Siqi (Siemens Healthineers), Peng, Hanchuan (Allen Institute for Brain Science), Cai, Weidong (University of Sydney)

16:00-17:30	TuPbPo-01.5

Zero-Shot Adaptation to Simulate 3D Ultrasound Volume by Learning a Multilinear Separable 2D Convolutional Neural Network, pp. 1780-1783.

Mooga, Anand (Indian Institute of Technology Kharagpur, India), Sethuraman, Ramanathan (Intel), Sheet, Debdoot (Indian Institute of Technology Kharagpur)

16:00-17:30	TuPbPo-01.6

MRI to CT Synthesis of the Lumbar Spine from a Pseudo-3D Cycle Gan, pp. 1784-1787.

Oulbacha, Reda (Polytechnique Montreal), Kadoury, Samuel (Polytechnique Montreal)

16:00-17:30	TuPbPo-01.7

Open-Set Oct Image Recognition with Synthetic Learning, pp. 1788-1792.

Xiao, Yuting (ShanghaiTech University), Gao, Shenghua (ShanghaiTech University), Chai, Zhenjie (Shanghaitech University), Zhou, Kang (ShanghaiTech University), Zhang, Tianyang (Cixi Institute of Biomedical Engineering, Ningbo Institute of In), Zhao, Yitian (Chinese Academy of Sciences), Cheng, Jun (Institute of Biomedical Engineering, Chinese Academy of Sciences), Liu, Jiang (Southern University of Science and Technology)

16:00-17:30	TuPbPo-01.8

Synthesis and Edition of Ultrasound Images Via Sketch Guided Progressive Growing GANs, pp. 1793-1797.

Liang, Jiamin (Shenzhen University), Yang, Xin (The Chinese University of Hong Kong), Li, Haoming (SHENZHEN University), Wang, Yi (Shenzhen University), Manh, The Van (Shenzhen University), Dou, Haoran (Shenzhen University), Chen, Chaoyu (Shenzhen University), Fang, Jinghui (Guangzhou Medical University), Liang, Xiaowen (Guangzhou Medical University), Mai, Zixin (Guangzhou Medical University), Zhu, Guowen (SHENZHEN University), Chen, Zhiyi (Guangzhou Medical University), Ni, Dong (Shenzhen University)

16:00-17:30	TuPbPo-01.9

Controllable Skin Lesion Synthesis Using Texture Patches, Bezier Curves and Conditional GANs, pp. 1798-1802.

Borges Oliveira, Dario Augusto (IBM Research)

16:00-17:30	TuPbPo-01.10

Multi-Modality Generative Adversarial Networks with Tumor Consistency Loss for Brain Mr Image Synthesis, pp. 1803-1807.

Xin, Bingyu (Tsinghua University), Hu, Yifan (Tencent Youtu Lab), Zheng, Yefeng (Tencent Youtu Lab), Liao, Hongen (Tsinghua University;)

16:00-17:30	TuPbPo-01.11

3D Ultrasound Generation from Partial 2D Observations Using Fully Convolutional and Spatial Transformation Networks, pp. 1808-1811.

Mezheritsky, Tal (Polytechnique Montreal), Vazquez Romaguera, Liset (Polytechnique Montreal), Kadoury, Samuel (Polytechnique Montreal)

TuPbPo-02	Oakdale Foyer Coral Foyer

Ultrasound Imaging and Analysis II (Poster Session)

Chair: Lavarello, Roberto	Pontificia Universidad Catolica Del Peru
Co-Chair: Noble, J Alison	University of Oxford

16:00-17:30	TuPbPo-02.1

Transformation Elastography: Converting Anisotropy to Isotropy, pp. 1812-1815.

Guidetti, Martina (University of Illinois at Chicago), Klatt, Dieter (The University of Illinois at Chicago), Royston, Thomas (University of Illinois at Chicago)

16:00-17:30	TuPbPo-02.2

CEUS-Net: Lesion Segmentation in Dynamic Contrast-Enhanced Ultrasound with Feature-Reweighted Attention Mechanism, pp. 1816-1819.

Wan, Peng (Nanjing University of Aeronautics and Astronautics), Chen, Fang (Nanjing University of Aeronautics and Astronautics), Zhu, Xiaowei (Nanjing University of Aeronautics and Astronautics), Liu, Chunrui (Department of Ultrasound, Drum Tower Hospital, the Affiliated Ho), Zhang, Yidan (Department of Ultrasound, Nanjing Drum Tower Hospital, the Affilia), Kong, Wentao (Drumtower Hospital, Medical College of Nanjing University), Zhang, Daoqiang (Nanjing University of Aeronautics and Astronautics)

16:00-17:30	TuPbPo-02.3

H-Scan Format for Classification of Ultrasound Scatterers and Matched Comparison to Histology Measurements, pp. 1820-1823.

Khairalseed, Mawia (University of Texas at Dallas), Rijal, Girdhari (University of Texas at Dallas), Hoyt, Kenneth (University of Texas at Dallas)

16:00-17:30	TuPbPo-02.4

Remove Appearance Shift for Ultrasound Image Segmentation Via Fast and Universal Style Transfer, pp. 1824-1828.

Liu, Zhendong (Shenzhen University), Yang, Xin (The Chinese University of Hong Kong), Liu, Shengfeng (Shenzhen University), Gao, Rui (Shenzhen University), Dou, Haoran (Shenzhen University), He, Shuangchi (School of Biomedical Engineering, Shenzhen University), Huang, Yuhao (Shenzhen University), Huang, Yankai (Shenzhen Luohu Hospital Group Luohu People's Hospital, the Thir), Zhang, Yuanji (Shenzhen Luohu Group Luohu People's Hospital, The Third Af), Luo, Huanjia (The Second Clinical Medical College of Jinan University, Shenzhe), Xiong, Yi (Shenzhen Luohu People's Hospital, the Third Affiliated Hospital, S), Ni, Dong (Shenzhen University)

Region Proposal Network with IoU-Balance Loss and Graph Prior for Landmark Detection in 3D Ultrasound, pp. 1829-1833.

Chen, Chaoyu (Shenzhen University), Yang, Xin (The Chinese University of Hong Kong), Huang, Ruobing (Shenzhen University), Shi, Wenlong (Shenzhen University), Liu, Shengfeng (Shenzhen University), Lin, Mingrong (Shenzhen Uniwersity), Huang, Yuhao (Shenzhen University), Yang, Yong (Shenzhen University), Zhang, Yuanji (Shenzhen Luohu Group Luohu People's Hospital, The Third Af), Luo, Huanjia (The Second Clinical Medical College of Jinan University, Shenzhe), Huang, Yankai (Shenzhen Luohu Hospital Group Luohu People's Hospital, the Thir), Xiong, Yi (Shenzhen Luohu People's Hospital, the Third Affiliated Hospital, S), Ni, Dong (Shenzhen University)

16:00-17:30　　　　　　　　　　　　　　　　TuPbPo-02.6

Breast Lesion Segmentation in Ultrasound Images with Limited Annotated Data, pp. 1834-1837.

Behboodi, Bahareh (Concordia University), Amiri, Mina (Concordia University), Brooks, Rupert (Nuance Communications and Concordia University), Rivaz, Hassan (Concordia University)

16:00-17:30　　　　　　　　　　　　　　　　TuPbPo-02.7

Three-Dimensional Voxel-Level Classification of Ultrasound Scattering, pp. 1838-1841.

Tai, Haowei (University of Texas at Dallas), Dolui, Swapnil (University of Texas at Dallas), Khairalseed, Mawia (University of Texas at Dallas), Hoyt, Kenneth (University of Texas at Dallas)

16:00-17:30　　　　　　　　　　　　　　　　TuPbPo-02.8

Automated Meshing of Anatomical Shapes for Deformable Medial Modeling: Application to the Placenta in 3d Ultrasound, pp. 1842-1846.

Pouch, Alison (University of Pennsylvania), Yushkevich, Paul (University of Pennsylvania), Aly, Abdullah (University of Pennsylvania), Woltersom, Alexander (University of Pennsylvania), Okon, Edidiong (University of Pennsylvania), Aly, Ahmed (University of Pennsylvania), Yushkevich, Natalie (University of Pennsylvania), Parameshwaran, Shobhana (University of Pennsylvania), Wang, Jiancong (PICSL Lab, University of Pennsylvannia), Oguz, Baris (University of Pennsylvania), Gee, James (University of Pennsylvania), Oguz, Ipek (Vanderbilt University), Schwartz, Nadav (University of Pennsylvania)

16:00-17:30　　　　　　　　　　　　　　　　TuPbPo-02.9

Self-Supervised Representation Learning for Ultrasound Video, pp. 1847-1850.

Jiao, Jianbo (University of Oxford), Droste, Richard (University of Oxford), Drukker, Lior (Nuffield Department of Women's and Reproductive Health, Universi), Papageorghiou, Aris (Nuffield Department of Obstetrics and Gynaecology, John Ra), Noble, J Alison (University of Oxford)

TuPbPo-03	Oakdale Foyer Coral Foyer

Lung, Chest, and Airways Image Analysis II (Poster Session)

16:00-17:30　　　　　　　　　　　　　　　　TuPbPo-03.1

A Robust Network Architecture to Detect Normal Chest X-Ray Radiographs, pp. 1851-1855.

Wong, Ken C. L. (IBM Research - Almaden Research Center), Moradi, Mehdi (IBM Research), Wu, Joy Tzung-yu (IBM Research - Almaden), Pillai, Anup (IBM Research), Sharma, Arjun (IBM), Gur, Yaniv (IBM Almaden Research Center), Ahmad, Hassan (IBM), Wunnava, Venkateswar (Deccan Hospital), Chiranjeevi, J (Deccan Hospital), Polaka, Kiran Kumar Reddy (Deccan Hospital), Chowdary, Minnekanti Sunil (Deccan Hospital), Reddy, Dc (Osmania University), Syeda-Mahmood, Tanveer (IBM Almaden Research Center)

16:00-17:30　　　　　　　　　　　　　　　　TuPbPo-03.2

Estimating Local Tissue Expansion in Thoracic Computed Tomography Images Using Convolutional Neural Networks, pp. 1856-1860.

Gerard, Sarah E. (Brigham Women's Hospital and Harvard Medical School), Reinhardt, Joseph M. (The University of Iowa), Christensen, Gary E. (The University of Iowa), San Jose Estepar, Raul (Brigham Women's Hospital and Harvard Medical School)

16:00-17:30　　　　　　　　　　　　　　　　TuPbPo-03.3

Improving Lung Nodule Detection with Learnable Non-Maximum Suppression, pp. 1861-1865.

Capia Quispe, Elvis Rusnel (University of Campinas), Melo e Sousa, Azael (Unicamp), Falcao, Alexandre Xavier (University of Campinas)

16:00-17:30　　　　　　　　　　　　　　　　TuPbPo-03.4

DeepSEED: 3D Squeeze-And-Excitation Encoder-Decoder Convolutional Neural Networks for Pulmonary Nodule Detection, pp. 1866-1869.

Li, Yuemeng (University of Pennsylvania), Fan, Yong (University of Pennsylvania)

16:00-17:30　　　　　　　　　　　　　　　　TuPbPo-03.5

Lung Nodule Malignancy Classification Based on NLSTx Data, pp. 1870-1874.

Veasey, Benjamin (University of Louisville), Farhangi, Mohammad Mehdi (University of Louisville), Frigui, Hichem (University of Louisville), Broadhead, Justin (University of Louisville), Dahle, Michael (University of Louisville), Pezeshk, Aria (U.S. Food and Drug Administration), Seow, Albert (University of Louisville), Amini, Amir (University of Louisville)

16:00-17:30　　　　　　　　　　　　　　　　TuPbPo-03.6

Relational Learning between Multiple Pulmonary Nodules Via Deep Set Attention Transformers, pp. 1875-1878.

Yang, Jiancheng (Shanghai Jiao Tong University), Deng, Haoran (Shanghai Jiao Tong University), Huang, Xiaoyang (Shanghai Jiao Tong University), Ni, Bingbing (Shanghai Jiao Tong University), Xu, Yi (Shanghai Jiao Tong University)

16:00-17:30　　　　　　　　　　　　　　　　TuPbPo-03.7

Localization of Critical Findings in Chest X-Ray without Local Annotations Using Multi-Instance Learning, pp. 1879-1882.

Schwab, Evan (Philips Research North America), Gooßen, Andre (Philips Research Germany), Deshpande, Hrishikesh (Philips Research, Hamburg, Germany), Saalbach, Axel (Philips GmbH, Innovative Technologies)

16:00-17:30　　　　　　　　　　　　　　　　TuPbPo-03.8

Locally Adaptive Half-Max Methods for Airway Lumen-Area and Wall-Thickness and Their Repeat CT Scan Reproducibility, pp. 1883-1886.

Nadeem, Syed Ahmed (University of Iowa), Hoffman, Eric (University of Iowa), Comellas, Alejandro (Department of Internal Medicine, University of Iowa, Iowa City,), Saha, Punam K. (University of Iowa)

16:00-17:30　　　　　　　　　　　　　　　　TuPbPo-03.9

Airway Segmentation in Speech MRI Using the U-Net Architecture, pp. 1887-1890.

Erattakulangara, Subin (University of Iowa), Lingala, Sajan Goud (The University of Iowa)

16:00-17:30	TuPbPo-03.10

Assessment of Lung Biomechanics in COPD Using Image Registration, pp. 1891-1895.

Pan, Yue (University of Iowa), Christensen, Gary E. (The University of Iowa), Durumeric, Oguz (University of Iowa), Gerard, Sarah (The University of Iowa), Bhatt, Surya P. (University of Alabama at Birmingham, Birmingham), Barr, R. Graham (Columbia University Medical Center), Hoffman, Eric (University of Iowa), Reinhardt, Joseph M. (The University of Iowa)

TuPbPo-04	Oakdale Foyer Coral Foyer

Machine Learning for Brain Studies II (Poster Session)

Chair: Bas, Erhan	General Electrics
Co-Chair: Freiman, Moti	Technion - Israel Institute of Technology

16:00-17:30	TuPbPo-04.1

Walking Imagery Evaluation Based on Multi-View Features and Stacked Denoising Auto-Encoder Network, pp. 1896-1899.

Liang, Enmin (Shenzhen University), Lei, Baiying (Shenzhen University), Elazab, Ahmed (Shenzhen University), Liang, Shuang (Chinese Academy of Sciences), Wang, Qiong (Shenzhen Institutes of Advanced Technology, Chinese Academy of S), Wang, Tianfu (Shenzhen University)

16:00-17:30	TuPbPo-04.2

Temporally Adaptive-Dynamic Sparse Network for Modeling Disease Progression, pp. 1900-1904.

Zhang, Jie (Arizona State University), Wang, Yalin (Arizona State University)

16:00-17:30	TuPbPo-04.3

Bayesian Skip-Autoencoders for Unsupervised Hyperintense Anomaly Detection in High Resolution Brain MRI, pp. 1905-1909.

Baur, Christoph (TU Munich), Wiestler, Benedikt (Dept. of Neuroradiology, TU Munich University Hospital), Albarqouni, Shadi (ETH Zurich), Navab, Nassir (TU Munich)

16:00-17:30	TuPbPo-04.4

Learning to Detect Brain Lesions from Noisy Annotations, pp. 1910-1914.

Karimi, Davood (Boston Children's Hospital, Harvard Medical School), Peters, Jurriaan (Boston Children's Hospital), Ouaalam, Abdelhakim (Boston Childrens Hospital), Prabhu, Sanjay (Boston Children's Hospital, Harvard Medical School), Sahin, Mustafa (Boston Children's Hospital), Krueger, Darcy A (Cincinnati Children's Hospital Medical Center), Kolevzon, Alexander (Seaver Autism Center for Research and Treatment, Icahn School Of), Eng, Charis (Genomic Medicine Institute, Cleveland Clinic), Warfield, Simon K. (Harvard Medical School), Gholipour, Ali (Children's Hospital Boston and Harvard Medical School)

16:00-17:30	TuPbPo-04.5

A High-Powered Brain Age Prediction Model Based on Convolutional Neural Network, pp. 1915-1919.

Rao, Guangxiang (Institute of Automation, Chinese Academy of Sciences), Li, Ang (Institute of Automation, Chinese Academy of Sciences), Liu, Yong (Chinese Academy of Sciences), Liu, Bing (Institute of Automation, Chinese Academy of Sciences)

16:00-17:30	TuPbPo-04.6

Deep Network-Based Feature Selection for Imaging Genetics: Application to Identifying Biomarkers for Parkinson's Disease, pp. 1920-1923.

Kim, Mansu (University of Pennsylvania), Won, Ji Hye (Sungkyunkwan University), Hong, Jisu (Sungkyunkwan University), Kwon, Junmo (Sungkyunkwan University), Park, Hyunjin (Sungkyunkwan University), Shen, Li (University of Pennsylvania)

16:00-17:30	TuPbPo-04.7

Deep Multimodal Brain Network Learning for Joint Analysis of Structural Morphometry and Functional Connectivity, pp. 1924-1928.

Zhang, Wen (School of Computing, Informatics, and Decision Systems Engineeri), Wang, Yalin (Arizona State University)

16:00-17:30	TuPbPo-04.8

Adaptive Weighted Minimax-Concave Penalty Based Dictionary Learning for Brain MR Images, pp. 1929-1932.

Pokala, Praveen Kumar (Indian Institute of Science, Bangalore), Chemudupati, Satvik (Indian Institute of Science), Seelamantula, Chandra Sekhar (Indian Institute of Science, Bangalore)

16:00-17:30	TuPbPo-04.9

Automatic Depression Detection Via Facial Expressions Using Multiple Instance Learning, pp. 1933-1936.

Wang, Yanfei (IBM), Ma, Jie (IBM), Hao, BIbo (IBM), Hu, Pengwei (IBM), Wang, Xiaoqian (Peking University), Mei, Jing (IBM), Li, Shaochun (IBM)

TuPbPo-05	Oakdale Foyer Coral Foyer

Heart Imaging and Analysis II (Poster Session)

16:00-17:30	TuPbPo-05.1

Automatic Determination of the Fetal Cardiac Cycle in Ultrasound Using Spatio-Temporal Neural Networks, pp. 1937-1940.

Lok Hin, Lee (University of Oxford), Noble, J Alison (University of Oxford)

16:00-17:30	TuPbPo-05.2

A Myocardial T1-Mapping Framework with Recurrent and U-Net Convolutional Neural Networks, pp. 1941-1944.

Jeelani, Haris (University of Virginia), Yang, Yang (Icahn School of Medicine at Mount Sinai), Zhou, Ruixi (University of Virginia), Kramer, Christopher (University of Virginia Health System), Salerno, Michael (University of Virginia), Weller, Daniel (University of Virginia)

16:00-17:30	TuPbPo-05.3

Supervised Learning for Segmenting Open Boundaries in Medical Images, pp. 1945-1948.

Amer, Karim (Nile University), Jacob, Athira (Siemens Healthineers), Funka-Lea, Gareth (Siemens Corp. Research), El-Zehiry, Noha (Siemens Healthcare)

16:00-17:30	TuPbPo-05.4

A Context Based Deep Learning Approach for Unbalanced Medical Image Segmentation, pp. 1949-1953.

Murugesan, Balamurali (Indian Institute of Technology Madras), Sarveswaran, Kaushik (Healthcare Technology Innovation Centre, IIT Madras Research Par), S, Vijaya Raghavan (Healthcare Technology Innovation Centre), M Shankaranarayana, Sharath (Indian Institute of Technology Madras), Sirukarumbur Shanmugaram, Keerthi Ram (IIT Madras), Sivaprakasam, Mohanasankar (Indian Institute of Technology Madras)

16:00-17:30	TuPbPo-05.5

Improved Simultaneous Multi-Slice Imaging for Perfusion Cardiac MRI Using Outer Volume Suppression and Regularized Reconstruction, pp. 1954-1957.

Demirel, Omer Burak (University of Minnesota), Weingärtner, Sebastian (Stanford University), Moeller, Steen (University of Minnesota), Akcakaya, Mehmet (University of Minnesota)

16:00-17:30	TuPbPo-05.6

Segmentation and Uncertainty Measures of Cardiac Tissues on Optical Coherence Tomography Via Convolutional Neural Networks, pp. 1958-1961.

Huang, Ziyi (Columbia University), Gan, Yu (The University of Alabama), Lye, Theresa (Columbia University), Theagene, Darnel (Columbia University), Chintapalli, Spandana (Columbia University), Virdi, Simeran (Imperial College London), Laine, Andrew F. (Columbia University), Angelini, Elsa (Imperial NIHR BRC, Imperial College London), Hendon, Christine (Columbia University)

16:00-17:30	TuPbPo-05.7

Segmentation of Five Components in Four Chamber View of Fetal Echocardiography, pp. 1962-1965.

Yang, Tingyang (Beihang University), Han, Jiancheng (Beijing Anzhen Hospital, Capital Medical University), Zhu, Haogang (Beihang University), Li, Tiantian (Beihang University), Liu, Xiaowei (Beijing Anzhen Hospital), Gu, Xiaoyan (Beijing Anzhen Hospital, Capital Medical University), Liu, Xiangyu (Beihang University), An, Shan (Beihang University), Yingying, Zhang (Beihang University), Zhang, Ye (Beijing Anzhen Hospital), He, Yihua (Beijing Anzhen Hospital Affiliated to Capital Medical University)

TuPbPo-06 — Oakdale Foyer Coral Foyer
Optical Coherence Tomography II (Poster Session)

Chair: Rivenson, Yair	1981

16:00-17:30	TuPbPo-06.1

Perceptual-Assisted Adversarial Adaptation for Choroid Segmentation in Optical Coherence Tomography, pp. 1966-1970.

Chai, Zhenjie (Shanghaitech University), Zhou, Kang (ShanghaiTech University), Yang, Jianlong (Cixi Institute of Biomedical Engineering, Chinese Academy of Sci), Ma, Yuhui (University of Chinese Academy of Sciences, Cixi Institute of Bio), Chen, Zhi (Fudan University Eye and ENT Hospital), Gao, Shenghua (ShanghaiTech University), Liu, Jiang (Southern University of Science and Technology)

16:00-17:30	TuPbPo-06.2

Memory-Augmented Anomaly Generative Adversarial Network for Retinal Oct Images Screening, pp. 1971-1974.

Zhang, Chengfen (PingAn Technology (Shenzhen) Co., Ltd), Wang, Yue (Ping an Technology (Shenzhen) Co), Zhao, Xinyu (Department of Ophthalmology, Peking Union Medical College Hospit), Guo, Yan (PingAn Technology (Shenzhen) Co., Ltd., Shenzhen, China), Xie, Guotong (PingAn Tech), Lv, Chuanfeng (PingAn Tech), Lv, Bin (PingAn Technology (Shenzhen) Co., Ltd)

16:00-17:30	TuPbPo-06.3

Full Field Optical Coherence Tomography Image Denoising Using Deep Learning with Spatial Compounding, pp. 1975-1978.

Chen, I-Ling (National Taiwan University), Ho, Tuan-Shu (National Taiwan University), Lu, Chih-Wei (Apollo Medical Optics)

16:00-17:30	TuPbPo-06.4

High-Speed Markerless Tissue Motion Tracking Using Volumetric Optical Coherence Tomography Images, pp. 1979-1982.

Schlüter, Matthias (Hamburg University of Technology), Glandorf, Lukas (Hamburg University of Technology), Sprenger, Johanna (Hamburg University of Technology), Gromniak, Martin (Hamburg University of Technology), Neidhardt, Maximilian (Hamburg University of Technology), Saathoff, Thore (Hamburg University of Technology), Schlaefer, Alexander (Hamburg University of Technology)

16:00-17:30	TuPbPo-06.5

Weakly Supervised Vulnerable Plaques Detection by Ivoct Image, pp.
1983-1986.

Shi, Peiwen (Xi'an Jiaotong University), Xin, Jingmin (Xi'an Jiaotong University), Zheng, Nanning (Xi'an Jiaotong University)

16:00-17:30	TuPbPo-06.6

Automated Quantification of Macular Vasculature Changes from OCTA Images of Hematologic Patients, pp. 1987-1991.

Engberg, Astrid (Technical University of Denmark), Amini, Abdullah (University of Copenhagen), Willerslev, Anne (Rigshospitalet-Glostrup), Larsen, Michael (University of Copenhagen), Sander, Birgit (Rigshospitalet-Glostrup), Kessel, Line (University of Copenhagen), Dahl, Anders Bjorholm (Technical University of Denmark, Department of Applied Mathemati), Dahl, Vedrana Andersen (Technical University of Denmark)

TuPbPo-07 — Oakdale Foyer Coral Foyer
Skin Imaging & Analysis (Poster Session)

Co-Chair: Witte, Russell	University of Arizona

16:00-17:30	TuPbPo-07.1

Automating Vitiligo Skin Lesion Segmentation Using Convolutional Neural Networks, pp. 1992-1995.

Low, Makena (Stanford University), Huang, Victor (University of California, Davis), Raina, Priyanka (Stanford University)

16:00-17:30	TuPbPo-07.2

Fusing Metadata and Dermoscopy Images for Skin Disease Diagnosis, pp. 1996-2000.

Li, Weipeng (Sun Yat-Sen University), Zhuang, Jiaxin (Sun Yat-Sen University), Wang, Ruixuan (Sun Yat-Sen University), Zhang, JianGuo (Department of Computer Science and Engineering, Southern Univers), Zheng, Wei-Shi (School of Data and Computer Science, Sun Yat-Sen University)

16:00-17:30	TuPbPo-07.3

Kappa Loss for Skin Lesion Segmentation in Fully Convolutional Network, pp. 2001-2004.

Zhang, Jing (INSA Rouen), Petitjean, Caroline (Université De Rouen), Ainouz, Samia (Institut National Des Sciences Appliquées De Rouen | INSA Rouen)

16:00-17:30	TuPbPo-07.4

A Multi-Task Self-Supervised Learning Framework for Scopy Images, pp. 2005-2009.

Li, Yuexiang (Tencent), Chen, Jiawei (Tencent), Zheng, Yefeng (Tencent Youtu Lab)

16:00-17:30	TuPbPo-07.5

Complementary Network with Adaptive Receptive Fields for Melanoma Segmentation, pp. 2010-2013.

Guo, Xiaoqing (City University of Hong Kong), Chen, Zhen (City University of Hong Kong), Yuan, Yixuan (City University of Hong Kong)

16:00-17:30	TuPbPo-07.6

Leveraging Adaptive Color Augmentation in Convolutional Neural Networks for Deep Skin Lesion Segmentation, pp. 2014-2017.

Saha, Anindo (Universitat De Girona), Prasad, Prem (Universitat De Girona), Thabit, Abdullah (Universitat De Girona)

16:00-17:30	TuPbPo-07.7

Deep Disentangled Representation Learning of PET Images for Lymphoma Outcome Prediction, pp. 2018-2021.

Guo, Yu (Tianjin University), Decazes, Pierre (University of Medicine, Rouen; Department of Nuclear Medicine, H), Becker, Stéphanie (Department of Nuclear Medicine, Henri Becquerel Cancer Center), Li, Hua (Washington University School of Medicine), Ruan, Su (Universite De Rouen)