PRIME-MICCAI workshop

PRedictive Intelligence in MEdicine will reshape our healthcare technologies

PRIME Program on October 1st, 2021

SESSION 1: 9:00-13:00 Asia/Europe (UTC)

09:00 - 09:15	Introduction and Welcome
09:15 - 9:45	**Oral Session 1** **P1 (09:15 - 9:20): Liver Tumor Localization and Characterization from Multi-Phase MR Volumes Using Key-Slice Parsing: A Physician-Inspired Approach** *Bolin Lai (Ping An Technology (Shanghai) Co.,Ltd.); Yuhsuan Wu (Ping An Technology (Shanghai) Co.,Ltd.)*; Xiaoyu Bai (Northwestern Polytechnical University); Xiao-Yun Zhou (PAII INC); Peng Wang (Department of Hepatobiliary Medicine, Eastern Hepatobiliary Surgery Hospital, Naval Medical University, Shanghai); Le Lu (PAII Inc.); Lingyun Huang (PingAn Technology); Jing Xiao (Ping An Insurance (Group) Company of China); Heping Hu (Department of Hepatobiliary Medicine, Eastern Hepatobiliary Surgery Hospital, Naval Medical University, Shanghai); Yong Xia (Northwestern Polytechnical University, Research & Development Institute of Northwestern Polytechnical University in Shenzhen); Adam P Harrison (PAII Inc.)* **P2 (09:20 - 9:25): Multi-Task Deep Segmentation and Radiomics for Automatic Prognosis in Head and Neck Cancer** *Vincent Andrearczyk (HES-SO Valais)*; Pierre Fontaine (HES-SO and Univ Rennes); Valentin Oreiller (HES-SO Valais); Joel Castelli (Rennes University); Mario Jreige (CHUV); John O Prior (CHUV); Adrien Depeursinge (HES-SO Valais-Wallis)* **P3 (9:25 - 9:30): Low-dose CT Denoising using Pseudo-CT Image Pairs** *Dongkyu Won (DGIST); Eujiin Jung (DGIST); Sion An (DGIST); Philip Chikontwe (DGIST (Daegu Gyeongbuk Institute of Science and Technology)); Sanghyun Park (DGIST)** **P4 (9:30 - 9:35): Self-guided Multi-attention Network for Periventricular Leukomalacia Recognition** *Zhuochen Wang (Shanghai Jiao Tong University)*; Tingting Huang (Department of Radiology, The First Affiliated Hospital of Henan University of Chinese Medicine); Bin Xiao (School of Biomedical Engineering, Med-X Research InstituteShanghai Jiao Tong University Shanghai China); Sheng Wang (Shanghai Jiao Tong University); Jiayu Huo (Shanghai Jiao Tong University); Zhong Xue (Shanghai United Imaging Intelligence Co., Ltd); Xiang S Zhou (United Imaging Intelligence); Fan Wu (Department of Radiology, The First Affiliated Hospital of Xi'an Jiaotong University); Heng Liu (Department of Radiology, Affiliated Hospital of Zunyi Medical University,); Haoxiang Jiang (Department of Radiology, The First Affiliated Hospital of Xi'an Jiaotong University); Qian Wang (Shanghai Jiao Tong University); Jian Yang (Hospital of Xi'an Jiaotong University)"* **P5 (9:35 - 9:40): FLAT-Net: Longitudinal Brain Graph Evolution Prediction from a Few Training Representative Templates** *Guris Özen (İstanbul Technical University); Ahmed Nebli (Higher Institute of Applied Science and Technologies (ISSAT), Universite de Sousse)*; Islem Rekik (Istanbul Technical University)* **P6 (9:40 - 9:45): Prediction of Pathological Complete Response to Neoadjuvant Chemotherapy using Multi-scale Patch Learning with Mammography** *Ho Kyung Shin (Kyungpook National University); Wonhwa Kim (Kyungpook National University Chilgok Hospital); Hyejung Kim (Kyungpook National University Chilgok Hospital); Chanho Kim (Kyungpook National University); Jaeil Kim (Kyungpook National University)**
9:45 - 10:00	**Group P1-P6 Q&A Session**

10:00 - 11:00	**Keynote Speech 1 and Q&A session [live]** **Speaker:** Prof Luping Zhu, University of Sydney **Title**: Exploring Fine-grained Image-text Description for Diagnostic Captioning
11:00 - 11:15	**Virtual Coffee Break**
11:15 - 11:50	**Oral Session 2** **P7 (11:15 – 11:20): False Positive Suppression in Cervical Cell Screening via Attention-Guided Semi-Supervised Learning** *Xiaping Du (Shanghai Jiao Tong University)*; Jiayu Huo (Shanghai Jiao Tong University); Yuanfang Qiao (Shanghai Jiao Tong University); Qian Wang (Shanghai Jiao Tong University); Lichi Zhang (Shanghai Jiao Tong University)* **P8 (11:20– 11:25): A Few-shot Learning Graph Multi-Trajectory Evolution Network for Forecasting Multimodal Baby Connectivity Development from a Baseline Timepoint** *Alaa Bessadok (University of Sousse, Tunisia)*; Ahmed Nebli (Higher Institute of Applied Science and Technologies (ISSAT), Universite de Sousse); Mohamed Ali Mahjoub (LATIS lab, National Engineering School of Sousse, ENISo, Sousse, Tunisia); Gang Li (University of North Carolina at Chapel Hill); Weili Lin (UNC Chapel Hill); Dinggang Shen (United Imaging Intelligence); Islem Rekik (Istanbul Technical University)* **P9 (11:25– 11:30): Mixing-AdaSIN: Constructing a De-biased Dataset using Adaptive Structural Instance Normalization and Texture Mixing** *Myeongkyun Kang (DGIST); Philip Chikontwe (DGIST (Daegu Gyeongbuk Institute of Science and Technology)); Miguel Luna (DGIST); Kyung Soo Hong (Yeungnam University Medical Center); June Hong Ahn (Yeungnam University Medical Center); Sanghyun Park (DGIST)** **P10 (11:35– 11:40): Anatomical Structure-aware Pulmonary Nodule Detection via Parallel Multi-Task RoI Head** *Haoyi Tao (Shanghai Jiao Tong University)*; Yuanfang Qiao (Shanghai Jiao Tong University); Lichi Zhang (Shanghai Jiao Tong University); Yiqiang Zhan (United Imaging Intelligence, Shanghai, China); Zhong Xue (Shanghai United Imaging Intelligence Co., Ltd); Qian Wang (Shanghai Jiao Tong University)* **P11 (11:40– 11:45): Uncertainty-Based Dynamic Graph Neighborhoods For Medical Segmentation** *Ufuk Demir (Istanbul Technical University)*; Atahan Özer (Istanbul Technical University); Yusuf Hüseyin Şahin (İTÜ); Gozde Unal (Istanbul Technical University)* **P12 (11:45– 11:50): A Multi-scale Capsule Network for Improving Diagnostic Generalizability in Breast Cancer Diagnosis using Ultrasonography** *Chanho Kim (Kyungpook National University); Wonhwa Kim (Kyungpook National University Chilgok Hospital); Hyejung Kim (Kyungpook National University Chilgok Hospital); Jaeil Kim (Kyungpook National University)**
11:50 - 12:05	**Group O6-O10 Q&A Session**
12:05 - 13:05	**Keynote Speech 3 and Q&A session** **Speaker:** Prof Aasa Feragen, Danish University of Technology **Title**: Topology-aware image registration

SESSION 2: 14:00-18:00 America/Europe (UTC)

14:00 - 14:30	**Oral Session 3** **P13 (14:00 - 14:05): Improving Tuberculosis Recognition on Bone-Suppressed Chest X-rays Guided by Task-Specific Features** *Yunbi Liu (School of Biomedical Engineering,Southern Medical University)*; Genggeng Qin (Nanfang Hospital); Yun Liu (ETH Zurich); Mingxia Liu (University of North Carolina at Chapel Hill); Wei Yang (Southern Medical University)* **P14 (14:05 - 14:10): Probabilistic Deep Learning with Adversarial Training and Volume Interval Estimation - Better Ways to Perform and Evaluate Predictive Models for White Matter Hyperintensities Evolution** *Febrian Rachmadi (RIKEN))*; María del C. Valdés Hernández (University of Edinburgh); Rizal Maulana (Universitas Indonesia); Joanna Wardlaw (University of Edinburgh); Stephen Makin (University of Aberdeen); Henrik Skibbe (RIKEN)* **P15 (14:10 - 14:15): Foreseeing Survival through 'Fuzzy Intelligence': A cognitively-inspired incremental learning based de novo model for Breast Cancer Prognosis by multi-omics data fusion** *Aviral Chharia (Thapar Institute of Engineering & Technology)*; Neeraj Kumar (Thapar University, India)* **P16 (14:15 - 14:20): Investigating and Quantifying the Reproducibility of Graph Neural Networks in Predictive Medicine** *Mohammed Amine Gharsallaoui (Ecole Polytechnique de Tunisie)*; Furkan Tornaci (Istanbul Technical University); Islem Rekik (Istanbul Technical University)* **P17 (14:20 - 14:25): Improving Across Dataset Brain Age Predictions using Transfer Learning** *Lara Dular (University of Ljubljana, Faculty of Electrical Engineering, Laboratory of Imaging Technologies)*; Ziga Spiclin (University of Ljubljana)* **P18 (14:25 – 14:30): Adversarial Bayesian Optimization for Quantifying Motion Artifact within MRI** *Anastasia Butskova (Stanford University); Rain Juhl (Stanford University); Dženan Zukić (Kitware Inc); Aashish Chaudhary (Kitware Inc.); Kilian Pohl (Stanford University); Qingyu Zhao (Stanford University)*
14:30 - 14:45	**Group O11-O15 Q&A Session**
14:45 - 15:45	**Keynote Speech 2 and Q&A session** **Speaker:** Prof Ben Glocker, Imperial College London **Title**: Deep Structural Causal Models for Counterfactual Inference
15:45 - 16:00	**Virtual Coffee Break**
16:00 - 17:00	**Keynote Speech 4 and Q&A session [live]** **Speaker:** Dr Gang Li, University of North Carolina **Title**: Learning-based Pediatric Neuroimage Analysis

17:00 - 17:30	**Oral Session 4**
	P19 (17:00– 17:05): Self Supervised Contrastive Learning on Multiple Breast Modalities Boosts Classification Performance *Shaked Perek (IBM Research)*; Mika Amit (IBM Research); Efrat Hexter (IBM Research)* **P20 (17:05– 17:10): Opportunistic Screening of Osteoporosis Using Plain Film Chest X-ray** *Fakai Wang (University of Maryland, College Park)*; Kang Zheng (PAII Inc.); Yirui Wang (PAII Inc.); Xiao-Yun Zhou (PAII INC.); Le Lu (PAII Inc.); Jing Xiao (Ping An Insurance (Group) Company of China); Min Wu (University of Maryland); Kuo Chang-Fu (Chang Gung Memorial Hospital); Shun Miao (PAII)* **P21 (17:10– 17:15): Integrating Multimodal MRIs for Adult ADHD Identification with Heterogeneous Graph Attention Convolutional Network** *Dongren Yao (University of North Carolina at Chapel Hill); Erkun Yang (UNC-Chapel Hill); Li Sun (Peking University Sixth Hospital/Institute of Mental Health); Jing Sui (Institute of Automation Chinese Academy of Sciences); Mingxia Liu (University of North Carolina at Chapel Hill)** **P22 (17:15– 17:20): Template-Based Inter-modality Super-resolution of Brain Connectivity** *Furkan Pala (Istanbul Technical University)*; Islem Mhiri (Université de Sousse); Islem Rekik (Istanbul Technical University)* **P23 (17:20– 17:25): The Pitfalls of Sample Selection: A Case Study on Lung Nodule Classification** *Vasileios Baltatzis (King's College London)*; Kyriaki-Margarita Bintsi (Imperial College London); Loic Le Folgoc (Imperial College London); Octavio E Martinez Manzanera (King's College London); Sam Ellis (King's College London); Arjun Nair (University College London Hospital); Sujal Desai (The Royal Brompton & Harefield NHS Foundation Trust); Ben Glocker (Imperial College London); Julia A Schnabel (King's College London)* **P24 (17:25– 17:30): Towards Cancer Patients Classification Using Liquid Biopsy** *Sebastian Cygert (Gdansk University of Technology)*; Andrzej Czyżewski (Gdansk University of Technology); Franciszek Górski (Gdansk University of Technology); Piotr Juszczyk (Gdansk University of Technology); Sebastian Lewalski (Gdansk University of Technology); Anna Supernat (Medical University of Gdańsk); Krzysztof Pastuszak (Gdansk University of Technology)*
17:30 - 17:45	**Group O16-O19 Q&A Session**
17:45 - 18:00	**Closing Remarks and Awards**