5th Oct : 10:30 UTC
Histopathology Image Analysis A

Pairwise Relation Learning for Semi-supervised Gland Segmentation

Xie, Yutong; Zhang, Jianpeng; Liao, Zhibin; Verjans, Johan; Shen, Chunhua; Xia, Yong

Northwestern Polytechnical University

Ranking-Based Survival Prediction on Histopathological Whole-Slide Images

Di, Donglin; Li, Shengrui; Zhang, Jun; Gao, Yue

Tsinghua University

Renal Cell Carcinoma Detection and Subtyping with Minimal Point-Based Annotation in Whole-Slide Images

Gao, Zeyu; Puttapirat, Pargorn; Shi, Jiangbo; Li, Chen

Xi'an Jiao tong University

Censoring-Aware Deep Ordinal Regression for Survival Prediction from Pathological Images

Xiao, Lichao; Yu, Jin-Gang; Liu, Zhifeng; Ou, Jiarong; Deng, Shule; Yang, Zhenhua; Li, Yuanqing

South China University of Technology

Tracing Diagnosis Paths on Histopathology WSIs for Diagnostically Relevant Case Recommendation

Zheng, Yushan; Jiang, Zhiguo; Zhang, Haopeng; Xie, Fengying; Shi, Jun

Beihang University

Weakly supervised multiple instance learning histopathological tumor segmentation

Lerousseau, Marvin; Vakalopoulou, Maria; Classe, Marion; Adam, Julien; Battistella, Enzo; Carré, Alexandre; Estienne, Théo; Henry, Théophraste; Deutsch, Eric; Paragios, Nikos

CentraleSupélec

5th Oct : 11:00 UTC
Histopathology Image Analysis B

Divide-and-Rule: Self-Supervised Learning for Survival Analysis in Colorectal Cancer

Abbet, Christian; Zlobec, Inti; Bozorgtabar, Behzad; Thiran, Jean-Philippe

EPFL

Microscopic fine-grained instance classification through deep attention

Fan, Mengran; Chakraborti, Tapabrata; Chang, Eric I-Chao; Xu, Yan; Rittscher, Jens

University of Oxford

A Deformable CRF Model for Histopathology Whole-slide Image Classification

Shen, Yiqing; Ke, Jing

SJTU

Deep Active Learning for Breast Cancer Segmentation on Immunohistochemistry Images

Shen, Haocheng; Tian, Kuan; Dong, Pei; Zhang, Jun; Yan, Kezhou; Che, Shannon; Yao, Jianhua; Luo, Pifu; Han, Xiao

Tencent

Multiple Instance Learning with Center Embeddings for Histopathology Classification

Chikontwe, Philip; Kim, Meejeong; Nam, Soo Jeong; Go, Heounjeong; Park, Sang Hyun

DGIST (Daegu Gyeongbuk Institute of Science and Technology

5th Oct : 11:30 UTC
Cell Segmentation and Stain Normalization A

Boundary-assisted Region Proposal Networks for Nucleus Segmentation

Chen, Shengcong; Ding, Changxing; Tao, Dacheng

South China University of Technology

BCData: A Large-Scale Dataset and Benchmark for Cell Detection and Counting

Huang, Zhongyi; Ding, Yao; Song, Guoli; Wang, Lin; Geng, Ruizhe; He, Hongliang; Du, Shan; Liu, Xia; Tian, Yonghong; Liang, Yongsheng; Zhou, S. Kevin; Chen, Jie

School of Electronic and Computer Engineering, Peking University

Weakly-Supervised Nucleus Segmentation Based on Point Annotations: A Coarse-to-Fine Self-Stimulated Learning Strategy

Tian, Kuan; Zhang, Jun; Shen, Haocheng; Yan, Kezhou; Dong, Pei; Yao, Jianhua; Che, Shannon; Luo, Pifu; Han, Xiao

Tencent

Structure Preserving Stain Normalization of Histopathology Images Using Self Supervised Semantic Guidance

Mahapatra, Dwarikanath; Bozorgtabar, Behzad; Thiran, Jean-Philippe; Shao, Ling

Inception Institute of Artificial Intelligence

A Novel Loss Calibration Strategy for Object Detection Networks Training on Sparsely Annotated Pathological Datasets

Li, Hansheng; Han, Xin; Kang, Yuxin; Shi, Xiaoshuang; Yan, Mengdi; Tong, Zixu; Bu, Qirong; Cui, Lei; Feng, Jun; Yang, Lin

Northwest University

Histopathological Stain Transfer Using Style Transfer Network With Adversarial Loss

Nishar, Harshal; Chavanke, Nikhil; Singhal, Nitin

AIRA MATRIX

Instance-aware Self-supervised Learning for Nuclei Segmentation

Xie, Xinpeng; Chen, Jiawei; Li, Yuexiang; Shen, Linlin; Ma, Kai; Zheng, Yefeng

Youtu Lab, Tencent

5th Oct : 10:30 UTC
Functional Brain Networks A

Estimating Common Harmonic Waves of Brain Networks on Stiefel Manifold

Chen, Jiazhou; Han, Guoqiang; Cai, Hongmin; Ma, Junbo; Kim, Minjeong; Laurienti, Paul J.; Wu, Guorong

South China University of Technology

Neural Architecture Search for Optimization of Spatial-temporal Brain Network Decomposition

Li, Qing; Zhang, Wei; Lv, Jinglei; Wu, Xia; Liu, Tianming

Beijing Normal University

Attention-Guided Deep Graph Neural Network for Longitudinal Alzheimer's Disease Analysis

Ma, Junbo; Zhu, Xiaofeng; Yang, Defu; Chen, Jiazhou; Wu, Guorong

University of North Carolina at Chapel Hill

Enriched Representation Learning in Resting-State fMRI for Early MCI Diagnosis

Jeon, Eunjin; Kang, Eunsong; Lee, Jiyeon; Lee, Jaein; Kam, Tae-Eui; Suk, Heung-Il

Korea University

Whole MILC: generalizing learned dynamics across tasks, datasets, and populations

Mahmood, Usman; Rahman, Md Mahfuzur; Fedorov, Alex; Lewis, Noah; Fu, Zening; Calhoun, Vince D.; Plis, Sergey M.

Georgia State University

5th Oct : 11:00 UTC
DWI and Tractography A

Tract Dictionary Learning for Fast and Robust Recognition of Fiber Bundles

Wu, Ye; Hong, Yoonmi; Ahmad, Sahar; Lin, Weili; Shen, Dinggang; Yap, Pew-Thian

UNC Chapel Hill

Globally Optimized Super-Resolution of Diffusion MRI Data via Fiber Continuity

Wu, Ye; Hong, Yoonmi; Ahmad, Sahar; Wei-Tang, Chang; Lin, Weili; Shen, Dinggang; Yap, Pew-Thian

UNC Chapel Hill

White Matter Tract Segmentation with Self-supervised Learning

Lu, Qi; Li, Yuxing; Ye, Chuyang

Beijing Institute of Technology

Estimating Tissue Microstructure with Undersampled Diffusion Data via Graph Convolutional Neural Networks

Chen, Geng; Hong, Yoonmi; Zhang, Yongqin; Kim, Jaeil; Huynh, Khoi Minh; Ma, Jiquan; Lin, Weili; Shen, Dinggang; Yap, Pew-Thian; the UNC/UMN Baby Connectome Project Consortium

University of North Carolina at Chapel Hill

Tractogram filtering of anatomically non-plausible fibers with geometric deep learning

Astolfi, Pietro; Verhagen, Ruben; Petit, Laurent; Olivetti, Emanuele; Masci, Jonathan; Boscaini, Davide; Avesani, Paolo

Fondazione Bruno Kessler and University of Trento

5th Oct : 11:30 UTC
Neuroimaging A

Topology-Aware Generative Adversarial Network for Joint Prediction of Multiple Brain Graphs from a Single Brain Graph

Bessadok, Alaa ; Mahjoub, Mohamed Ali; Rekik, Islem

LATIS lab, University of Sousse, Tunisia

Edge-variational Graph Convolutional Networks for Uncertainty-aware Disease Prediction

Huang, Yongxiang; Chung, Albert C. S.

The Hong Kong University of Science and Technology

Fisher-Rao Regularized Transport Analysis of the Glymphatic System and Waste Drainage

Elkin, Rena; Nadeem, Saad; Lee, Hedok; Benveniste, Helene; Tannenbaum, Allen

Memorial Sloan Kettering Cancer Center

Joint Neuroimage Synthesis and Representation Learning for Conversion Prediction of Subjective Cognitive Decline

Liu, Yunbi; Pan, Yongsheng; Yang, Wei; Ning, Zhenyuan; Yue, Ling ; Liu, Mingxia; Shen, Dinggang

School of Biomedical Engineering,Southern Medical University

Differentiable Deconvolution for Improved Stroke Perfusion Analysis

de la Rosa, Ezequiel; Robben, David; Sima, Diana M.; Kirschke, Jan S.; Menze, Bjoern H.

Technical University of Munich

5th Oct : 10:30 UTC
Self-supervised learning A

Dual-task Self-supervision for Cross-Modality Domain Adaptation

Xue, Yingying; Feng, Shixiang; Zhang, Ya; Zhang, Xiaoyun; Wang, Yan-Feng

Cooperative Medianet Innovation Center, Shang hai Jiao Tong University

Dual-Teacher: Integrating Intra-domain and Inter-domain Teachers for Annotation-efficient Cardiac Segmentation

Li, Kang; Wang, Shujun; Yu, Lequan; Heng, Pheng-Ann

The Chinese University of Hong Kong

Test-time Unsupervised Domain Adaptation

Varsavsky, Thomas; Orbes-Arteaga, Mauricio; Sudre, Carole H.; Graham, Mark S.; Nachev, Parashkev; Cardoso, M. Jorge

University College London

Self domain adapted network

He, Yufan; Carass, Aaron; Zuo, Lianrui; Dewey, Blake E.; Prince, Jerry L.

johns hopkins university

Entropy Guided Unsupervised Domain Adaptation for Cross-Center Hip Cartilage Segmentation from MRI

Zeng, Guodong; Schmaranzer, Florian; Lerch, Till D.; Boschung, Adam; Zheng, Guoyan; Burger, Jürgen; Gerber, Kate; Tannast, Moritz; Siebenrock, Klaus; Kim, Young-Jo; Novais, Eduardo N.; Gerber, Nicolas

University of Bern

5th Oct : 11:00 UTC
Semi-supervised learning A

Deep Semi-supervised Knowledge Distillation for Overlapping Cervical Cell Instance Segmentation

Zhou, Yanning; Chen, Hao; Lin, Huangjing; Heng, Pheng-Ann

The Chinese University of HongKong

DMNet: Difference Minimization Network for Semi-supervised Segmentation in Medical Images

Fang, Kang; Li, Wu-Jun

Nanjing University

Double-uncertainty Weighted Method for Semi-supervised Learning

Wang, Yixin; Zhang, Yao; Tian, Jiang; Zhong, Cheng; Shi, Zhongchao; Zhang, Yang; He, Zhiqiang

Institute of Computing Technology, Chinese Academy of Sciences; University of Chinese Academy of Sciences

Shape-aware Semi-supervised 3D Semantic Segmentation for Medical Images

Li, Shuailin; Zhang, Chuyu; He, Xuming

PLUS Lab, Shanghaitech University

Local and Global Structure-aware Entropy Regularized Mean Teacher Model for 3D Left Atrium segmentation

Hang, Wenlong; Feng, Wei; Liang, Shuang; Yu, Lequan; Wang, Qiong; Choi, Kup-Sze; Qin, Jing

Nanjing TECH University

Improving dense pixelwise prediction of epithelial density using unsupervised data augmentation for consistency regularization

To, Minh Nguyen Nhat; Sankineni, Sandeep; Xu, Sheng; Turkbey, Baris; Pinto, Peter A.; Moreno, Vanessa; Merino, Maria; Wood, Bradford J.; Kwak, Jin Tae

Sejong University

5th Oct : 11:30 UTC
Semi-supervised learning B

Knowledge-guided Pretext Learning for Utero-placental Interface Detection

Qi, Huan; Collins, Sally; Noble, J. Alison

University of Oxford

Self-supervised Depth Estimation to Regularise Semantic Segmentation in Knee Arthroscopy

Liu, Fengbei; Jonmohamadi , Yaqub; Maicas, Gabriel; Pandey, Ajay K.; Carneiro, Gustavo

University of Adelaide

Semi-supervised Medical Image Classification with Global Latent Mixing

Gyawali, Prashnna Kumar; Ghimire, Sandesh; Bajracharya, Pradeep; Li, Zhiyuan; Wang, Linwei

Rochester Institute of Technology

Self-Loop Uncertainty: A Novel Pseudo-Label for Semi-Supervised Medical Image Segmentation

Li, Yuexiang; Chen, Jiawei; Xie, Xinpeng; Ma, Kai; Zheng, Yefeng

Youtu Lab, Tencent

Semi-Supervised Classification of Diagnostic Radiographs with NoTeacher: A Teacher that is not Mean

Unnikrishnan, Balagopal; Nguyen, Cuong Manh; Balaram, Shafa; Foo, Chuan Sheng; Krishnaswamy, Pavitra

*Institute for Infocomm Research, A*STAR*

Predicting Potential Propensity of Adolescents to Drugs via New Semi-Supervised Deep Ordinal Regression Model

Ganjdanesh, Alireza; Ghasedi, Kamran; Zhan, Liang; Cai, Weidong; Huang, Heng

University of Pittsburgh

5th Oct : 10:30 UTC
Segmentation - General A

TexNet: Texture Loss Based Network for Gastric Antrum Segmentation in Ultrasound

Dong, Guohao; Zou, Yaoxian; Jiao, jiaming; Liu, Yuxi; Liu, Shuo; Liang, Tianzhu; Liu, Chaoyue; Chen, Zhijie; Zhu, Lei; Ni, Dong; Lin, Muqing

Mindray

Multi-organ Segmentation via Co-training Weight-averaged Models from Few-organ Datasets

Huang, Rui; Zhen, Yuanjie; Hu, Zhiqiang; Zhang, Shaoting; Li, Hongsheng

Chinese University of Hong Kong

Suggestive Annotation of Brain Tumour Images with Gradient-guided Sampling

Dai, Chengliang; Wang, Shuo; Mo, Yuanhan; Zhou, Kaichen; Angelini, Elsa D.; Guo, Yike; Bai, Wenjia

Imperial College London

Pay More Attention to Discontinuity for Medical Image Segmentation

Chu, Jiajia; Chen, Yajie; Zhou, Wei; Shi, Heshui; Cao, Yukun; Tu, Dandan; Jin, Richu; Xu, Yongchao

Huazhong University of Science and Technology

Learning 3D Features with 2D CNNs via Surface Projection for CT Volume Segmentation

Song, Youyi; Yu, Zhen; Zhou, Teng; Teoh, Jeremy Yuen-Chun ; Lei, Baiying; Choi, Kup-Sze; Qin, Jing

The Hong Kong Polytechnic University

Deep Class-specific Affinity-Guided Convolutional Network for Multimodal Unpaired Image Segmentation

Chen, Jingkun; Li, Wenqi; Li, Hongwei; Zhang, Jianguo

Southern University of Science and Technology

Memory-efficient Automatic Kidney and Tumor Segmentation Based on Non-local Context Guided 3D U-Net

Li, Zhuoying; Pan, Junquan; Wu, Huisi; Wen, Zhenkun; Qin, Jing

Shenzhen University

5th Oct : 11:00 UTC
Segmentation - General B

Deep Small Bowel Segmentation with Cylindrical Topological Constraints

Shin, Seung Yeon; Lee, Sungwon; Elton, Daniel C.; Gulley, James L.; Summers, Ronald M.

National Institutes of Health

Learning Sample-adaptive Intensity Lookup Table for Brain Tumor Segmentation

Yu, Biting; Zhou, Luping; Wang, Lei; Yang, Wanqi; Yang, Ming; Bourgeat, Pierrick; Fripp, Jurgen

University of Sydney

Superpixel-Guided Label Softening for Medical Image Segmentation

Li, Hang; Wei, Dong; Cao, Shilei; Ma, Kai; Wang, Liansheng; Zheng, Yefeng

Xiamen University

Revisiting Rubik's Cube: Self-supervised Learning with Volume-wise Transformation for 3D Medical Image Segmentation

Tao, Xing; Li, Yuexiang; Zhou, Wenhui; Ma, Kai; Zheng, Yefeng

Hangzhou Dianzi University

Robust Medical Image Segmentation from Non-expert Annotations with Tri-network

Zhang, Tianwei; Yu, Lequan; Hu, Na; Lv, Su; Gu, Shi

University of Electronic Science and Technology of China

Robust Fusion of Probability Maps

Audelan, Benoît; Hamzaoui, Dimitri; Montagne, Sarah; Renard-Penna, Raphaële; Delingette, Hervé

INRIA

Calibrated Surrogate Maximization of Dice

Nordström, Marcus; Bao, Han; Löfman, Fredrik; Hult, Henrik; Maki, Atsuto; Sugiyama, Masashi

KTH Royal Institute of Technology

5th Oct : 11:30 UTC
Segmentation - General C

Uncertainty-Guided Efficient Interactive Refinement of Fetal Brain Segmentation from Stacks of MRI Slices

Wang, Guotai; Aertsen, Michael; Deprest, Jan; Ourselin, Sébastien; Vercauteren, Tom; Zhang, Shaoting

University of Electronic Science and Technology of China

Widening the focus: biomedical image segmentation challenges and the underestimated role of patch sampling and inference strategies

Madesta, Frederic; Schmitz, Rüdiger; Rösch, Thomas; Werner, René

University Medical Center Hamburg-Eppendorf

Voxel2Mesh: 3D Mesh Model Generation from Volumetric Data

Wickramasinghe, Udaranga; Remelli, Edoardo; Knott, Graham; Fua, Pascal

EPFL, Switzerland

Unsupervised Learning for CT Image Segmentation via Adversarial Redrawing

Song, Youyi; Zhou, Teng; Teoh, Jeremy Yuen-Chun ; Zhang, Jing; Qin, Jing

The Hong Kong Polytechnic University

Deep Active Contour Network for Medical Image Segmentation

Zhang, Mo; Dong, Bin; Li, Quanzheng

Peking University

Learning Crisp Edge Detector Using Logical Refinement Network

Liu, Luyan; Ma, Kai; Zheng, Yefeng

Tencent

Defending Deep Learning-based Biomedical Image Segmentation from Adversarial Attacks: A Low-cost Frequency Refinement Approach

Liu, Qi; Jiang, Han; Liu, Tao; Liu, Zihao; Li, Sicheng; Wen, Wujie; Shi, Yiyu

Lehigh University

5th Oct : 10:30 UTC
Lung Applications A

Hierarchical Classification of Pulmonary Lesions: A Large-Scale Radio-Pathomics Study

Yang, Jiancheng; Gao, Mingze; Kuang, Kaiming; Ni, Bingbing; She, Yunlang; Xie, Dong; Chen, Chang

Shanghai Jiao Tong University

Learning Tumor Growth via Follow-Up Volume Prediction for Lung Nodules

Li, Yamin; Yang, Jiancheng; Xu, Yi; Xu, Jingwei; Ye, Xiaodan; Tao, Guangyu; Xie, Xueqian; Guixue, Liu

Shanghai Jiao Tong University

Multi-stream Progressive Up-sampling Network for Dense CT Image Reconstruction

Liu, Qiuyue; Zhou, Zhen; Liu, Feng; Fang, Xiangming; Yu, Yizhou; Wang, Yizhou

Peking University

Abnormality Detection in Chest X-ray Images Using Uncertainty Prediction Autoencoders

Mao, Yifan; Xue, Fei-Fei; Wang, Ruixuan; Zhang, Jianguo; Zheng, Wei-Shi; Liu, Hongmei

Sun Yat-sen University

Region Proposals for Saliency Map Refinement for Weakly-supervised Disease Localisation and Classification

Hermoza, Renato; Maicas, Gabriel; Nascimento, Jacinto C.; Carneiro, Gustavo

University of Adelaide

CPM-Net: A 3D Center-Points Matching Network for Pulmonary Nodule Detection in CT Scans

Song, Tao; Chen, Jieneng; Luo, Xiangde; Huang, Yechong; Liu, Xinglong; Huang, Ning; Chen, Yinan; Ye, Zhaoxiang; Sheng, Huaqiang; Zhang, Shaoting; Wang, Guotai

SenseTime Research

5th Oct : 11:00 UTC
Lung Applications B

Interpretable Identification of Interstitial Lung Diseases (ILD) Associated Findings from CT

Wu, Yifan; Wang, Jiancong ; Lindsay, William D; Wen, Tarmily; Shi, Jianbo; Gee, James

University of Pennsylvania

Learning with Sure Data for Nodule-Level Lung Cancer Prediction

Zhang, Hanxiao; Gu, Yun; Qin, Yulei; Yao, Feng; Yang, Guang-Zhong

Institute of Medical Robotics, Shanghai Jiao Tong University

Cascaded Robust Learning at Imperfect Labels for Chest X-ray Segmentation

Xue, Cheng; Deng, Qiao; Li, Xiaomeng; Dou, Qi; Heng, Pheng-Ann

Chinese University of Hong Kong

Class-Aware Multi-Window Adversarial Lung Nodule Synthesis Conditioned on Semantic Features

Wang, Qiuli; Zhang, Xingpeng; Chen, Wei; Wang, Kun; Zhang, Xiaohong

Chongqing University

Nodule2vec: a 3D Deep Learning System for Pulmonary Nodule Retrieval Using Semantic Representation

Kravets, Ilia; Heletz, Tal; Greenspan, Hayit

Independent Researcher

Deep Active Learning for Effective Pulmonary Nodule Detection

Liu, Jingya; Cao, Liangliang; Tian, Yingli

City College of New York

5th Oct : 11:30 UTC
Dermatology

A distance-based loss for smooth and continuous skin layer segmentation in optoacoustic images.

Gerl, Stefan; Paetzold, Johannes C.; He, Hailong; Ezhov, Ivan; Shit, Suprosanna; Kofler, Florian; Bayat, Amirhossein; Tetteh, Giles; Ntziachristos, Vasilis; Menze, Bjoern H.

TUM

Fairness of Classifiers Across Skin Tones in Dermatology

Kinyanjui, Newton M.; Odonga, Timothy; Cintas, Celia; Codella, Noel C. F.; Panda, Rameswar; Sattigeri, Prasanna; Varshney, Kush R.

Carnegie Mellon University Africa

Alleviating the Incompatibility between Cross Entropy Loss and Episode Training for Few-shot Skin Disease Classification

Zhu, Wei; Liao, Haofu; Li, Wenbin; Li, Weijian; Luo, Jiebo

University of Rochester

Clinical-Inspired Network for Skin Lesion Recognition

Liu, Zihao; Xiong, Ruiqin; Jiang, Tingting

Peking University

Multi-class Skin Lesion Segmentation for Cutaneous T-cell Lymphomas on High-Resolution Clinical Images

Liu, Zihao; Pan, Haihao; Gong, Chen; Fan, Zejia; Wen, Yujie; Jiang, Tingting; Xiong, Ruiqin; Li, Hang; Wang, Yang

Peking University

5th Oct : 10:30 UTC
Image Registration A

MvMM-RegNet: A new image registration framework based on multivariate mixture model and neural network estimation

Luo, Xinzhe; Zhuang, Xiahai

Fudan University

Database Annotation with few Examples: An Atlas-based Framework using Diffeomorphic Registration of 3D trees

Antonsanti, Pierre-Louis; Benseghir, Thomas; Jugnon, Vincent; Glaunès, Joan

GE Healthcare

Pair-wise and Group-wise Deformation Consistency in Deep Registration Network

Gu, Dongdong; Cao, Xiaohuan; Ma, Shanshan; Chen, Lei; Liu, Guocai; Shen, Dinggang; Xue, Zhong

Shanghai United Imaging Intelligence, Co., Ltd.,Hunan University

Semantic Hierarchy Guided Registration Networks for Intra-Subject Pulmonary CT Image Alignment

Chen, Liyun; Cao, Xiaohuan; Chen, Lei; Gao, Yaozong; Shen, Dinggang; Wang, Qian; Xue, Zhong

Shanghai Jiaotong University

Highly accurate and memory efficient unsupervised learning-based discrete CT registration using 2.5D displacement search

Heinrich, Mattias P.; Hansen, Lasse

University of Luebeck

Unsupervised Learning Model for Registration of Multi-Phase Ultra-Widefield Fluorescein Angiography

Lee, Gyeong Min; Seo, Kwang Deok; Song, Hye Ju; Park, Dong Geun; Ryu, Ga Hyung; Sagong, Min; Park, Sang Hyun

DGIST

5th Oct : 11:00 UTC
Image Registration B

Large Deformation Diffeomorphic Image Registration with Laplacian Pyramid Networks

Mok, Tony C. W.; Chung, Albert C. S.

Hong Kong University of Science and Technology

Adversarial Uni- and Multi-modal Stream Networks for Multimodal Image Registration

Xu, Zhe; Luo, Jie; Yan, Jiangpeng; Pulya, Ritvik; Li, Xiu; Wells III, William M.; Jayender, Jagadeesan

Tsinghua University / Harvard Medical School

Cross-Modality Multi-Atlas Segmentation Using Deep Neural Networks

Ding, Wangbin; Li, Lei; Zhuang, Xiahai; Huang, Liqin

Fuzhou University

Longitudinal Image Registration with Temporal-order and Subject-specificity Discrimination

Yang, Qianye; Fu, Yunguan; Giganti, Francesco; Ghavami, Nooshin; Chen, Qingchao; Noble, J. Alison; Vercauteren, Tom; Barratt, Dean; Hu, Yipeng

University College London

Flexible Bayesian Modelling for Nonlinear Image Registration

Brudfors, Mikael; Balbastre, Yaël; Flandin, Guillaume; Nachev, Parashkev; Ashburner, John

University College London

5th Oct : 11:30 UTC

PET

Simultaneous Denoising and Motion Estimation for Low-dose Gated PET using a Siamese Adversarial Network with Gate-to-Gate Consistency Learning

Zhou, Bo; Tsai, Yu-Jung; Liu, Chi

Yale University

Lymph Node Gross Tumor Volume Detection and Segmentation via Distance-based Gating using 3D CT/PET Imaging in Radiotherapy

Zhu, Zhuotun; Jin, Dakai; Yan, Ke; Ho, Tsung-Ying; Ye, Xianghua; Guo, Dazhou; Chao, Chun-Hung; Xiao, Jing; Yuille, Alan; Lu, Le

The Johns Hopkins University

Multi-Modality Information Fusion for Radiomics-based Neural Architecture Search

Peng, Yige; Bi, Lei; Fulham, Michael; Feng, Dagan; Kim, Jinman

The University of Sydney

Lymph Node Gross Tumor Volume Detection in Oncology Imaging via Relationship Learning Using Graph Neural Network

Chao, Chun-Hung; Zhu, Zhuotun; Guo, Dazhou; Yan, Ke; Ho, Tsung-Ying; Cai, Jinzheng; Harrison, Adam P.; Ye, Xianghua; Xiao, Jing; Yuille, Alan; Sun, Min; Lu, Le; Jin, Dakai

National Tsing Hua University

Rethinking PET Image Reconstruction: Ultra-Low-Dose, Sinogram and Deep Learning

Feng, Qiupeng; Liu, Huafeng

Zhejiang University

Clinically Translatable Direct Patlak Reconstruction from Dynamic PET with Motion Correction Using Convolutional Neural Network

Xie, Nuobei; Gong, Kuang; Guo, Ning; Qin, Zhixing; Cui, Jianan; Wu, Zhifang; Liu, Huafeng ; Li, Quanzheng

Zhejiang University

5th Oct : 15:00 UTC
Biological/Optical/Microscopic Imaging A

Channel Embedding for Informative Protein Identification from Highly Multiplexed Images

Abdel Magid, Salma; Jang, Won-Dong; Schapiro, Denis; Wei, Donglai; Tompkin, James; Sorger, Peter K.; Pfister, Hanspeter

Harvard University

Demixing Calcium Imaging Data in C. elegans via Deformable Non-negative Matrix Factorization

Nejatbakhsh, Amin; Varol, Erdem; Yemini, Eviatar; Venkatachalam, Vivek; Lin, Albert; Samuel, Aravinthan D. T.; Hobert, Oliver; Paninski, Liam

Columbia University

Automated Measurements of Key Morphological Features of Human Embryos for IVF

Leahy, Brian D.; Jang, Won-Dong; Yang, Helen Y.; Struyven, Robbert; Wei, Donglai; Sun, Zhe; Lee, Kylie R.; Royston, Charlotte; Cam, Liz; Kalma, Yael; Azem, Foad; Ben-Yosef, Dalit; Pfister, Hanspeter; Needleman, Daniel

Harvard University

A Novel Approach to Tongue Standardization and Feature Extraction

Wang, Chenhao; Cattaneo, Camilla; Liu, Jing; Bredie, Wender; Pagliarini, Ella; Sporring, Jon

University of Copenhagen

Patch-based Non-Local Bayesian Networks for Blind Confocal Microscopy Denoising

Izadi, Saeed; Hamarneh, Ghassan

Simon Fraser University

Attention-guided Quality Assessment for Automated Cryo-EM Grid Screening

Xu, Hong; Timm, David E.; Elhabian, Shireen Y.

Scientific Computing and Imaging Institute,University of Utah

5th Oct : 15:30 UTC
Biological/Optical/Microscopic Imaging B

MitoEM Dataset: Large-scale 3D Mitochondria Instance Segmentation from EM Images

Wei, Donglai; Lin, Zudi; Franco-Barranco, Daniel; Wendt, Nils É; Liu, Xingyu; Yin, Wenjie; Huang, Xin; Gupta, Aarush ; Jang, Won-Dong; Wang, Xueying; Arganda-Carreras, Ignacio; Lichtman, Jeff; Pfister, Hanspeter

Harvard University

Learning Guided Electron Microscopy with Active Acquisition

Mi, Lu; Wang, Hao; Meirovitch, Yaron; Schalek, Richard; Turaga, Srinivas; Lichtman, Jeff; Samuel, Aravinthan D. T.; Shavit, Nir

MIT

Neuronal Subcompartment Classification and Merge Error Correction

Li, Hanyu; Januszewski, Michal; Jain, Viren; Li, Peter H.

The University of Chicago

Microtubule Tracking in Electron Microscopy Volumes

Eckstein, Nils; Buhmann, Julia; Cook, Matthew; Funke, Jan

HHMI Janelia Research Campus

Leveraging Tools from Autonomous Navigation for Rapid, Robust Neuron Connectivity

Drenkow, Nathan; Joyce, Justin; Matelsky, Jordan; Heiko, Jennifer; Larabi, Reem; Kleissas, Dean; Wester, Brock; Gray-Roncal, William

Johns Hopkins University Applied Physics Laboratory

Statistical Atlas of C.elegans Neurons

Varol, Erdem; Nejatbakhsh, Amin; Sun, Ruoxi; Mena, Gonzalo; Yemini, Eviatar; Hobert, Oliver; Paninski, Liam

Columbia University

Probabilistic Segmentation and Labeling of C. elegans Neurons

Nejatbakhsh, Amin; Varol, Erdem; Yemini, Eviatar; Hobert, Oliver; Paninski, Liam

Columbia University

5th Oct : 15:00 UTC
Brain Development and Atlases A

A New Metric for Characterizing Dynamic Redundancy of Dense Brain Chronnectome and Its Application to Early Detection of Alzheimer's Disease

Ghanbari, Maryam; Hsu, Li-Ming; Zhou, Zhen; Ghanbari, Amir; Mo, Zhanhao; Yap, Pew-Thian; Zhang, Han; Shen, Dinggang

UNC at Chapel Hill

A computational framework for dissociating development-related from individually variable flexibility in regional modularity assignment in early infancy

Soussia, Maryssa; Wen, Xuyun; Zhou, Zhen; Jin, Bing; Kam, Tae-Eui; Hsu, Li-Ming; Wu, Zhengwang; Li, Gang; Wang, Li; Rekik, Islem; Lin, Weili; Shen, Dinggang; Zhang, Han; the UNC/UMN Baby Connectome Project Consortium

University of North Carolina at Chapel Hill

Domain-invariant Prior Knowledge Guided Attention Networks for Robust Skull Stripping of Developing Macaque Brains

Zhong, Tao; Zhang, Yu; Zhao, Fenqiang; Pei, Yuchen; Liao, Lufan; Ning, Zhenyuan; Wang, Li; Shen, Dinggang; Li, Gang

School of Biomedical Engineering, Southern Medical University

Self-weighted Multi-Task Learning for Subjective Cognitive Decline Diagnosis

Cheng, Nina; Frangi, Alejandro; Zhang, Zhi-Guo; Deng, Denao; Zhao, Lihua; Wang , Tianfu ; Wei, Yichen; Yu, Bihan; Mai, Wei; Duan, Gaoxiong; Nong, Xiucheng; Li, Chong; Su, Jiahui; Lei, Baiying

Shenzhen University

Parkinson's Disease Detection from fMRI-derived Brainstem Regional Functional Connectivity Networks

Haq, Nandinee Fariah; Cai, Jiayue; Yu, Tianze; Mckeown, Martin J.; Wang, Z. Jane

University of British Columbia

5th Oct : 15:30 UTC
Brain Development and Atlases B

Persistent Feature Analysis of Multimodal Brain Networks Using Generalized Fused Lasso for EMCI Identification

Li, Jin; Bian, Chenyuan; Chen, Dandan; Meng, Xianglian; Luo, Haoran; Liang, Hong; Shen, Li

Harbin Engineering University

Recovering Brain Structural Connectivity from Functional Connectivity via Multi-GCN based Generative Adversarial Network

Zhang, Lu; Wang, Li; Zhu, Dajiang

University of Texas at Arlington

From Connectomic to Task-evoked Fingerprints: Individualized Prediction of Task Contrasts from Resting-state Functional Connectivity

Ngo, Gia H.; Khosla, Meenakshi; Jamison, Keith; Kuceyeski, Amy; Sabuncu, Mert R.

Cornell University

Disentangled Intensive Triplet Autoencoder for Infant Functional Connectome Fingerprinting

Hu, Dan; Wang, Fan; Zhang, Han; Wu, Zhengwang; Wang, Li; Lin, Weili; Li, Gang; Shen, Dinggang; the UNC/UMN Baby Connectome Project Consortium

University of North Carolina at Chapel Hill

COVLET: Covariance-based Wavelet-like Transform for Statistical Analysis of Brain Characteristics in Children

Yang, Fan; Isaiah, Amal; Kim, Won Hwa

University of Texas at Arlington

5th Oct : 15:00 UTC
Self-supervised learning B

User-Guided Domain Adaptation for Rapid Annotation from User Interactions: A Study on Pathological Liver Segmentation

Raju, Ashwin; Ji, Zhanghexuan; Cheng, Chi Tung; Cai, Jinzheng; Huang, Junzhou; Xiao, Jing; Lu, Le; Liao, ChienHung; Harrison, Adam P.

University of Texas, Arlington

SALAD: Self-Supervised Aggregation Learning for Anomaly Detection on X-Rays

Bozorgtabar, Behzad; Mahapatra, Dwarikanath; Vray, Guillaume; Thiran, Jean-Philippe

EPFL

Scribble-based Domain Adaptation via Deep Co-Segmentation

Dorent, Reuben; Joutard, Samuel; Shapey, Jonathan; Bisdas, Sotirios; Kitchen, Neil; Bradford, Robert ; Saeed, Shakeel; Modat, Marc; Ourselin, Sébastien; Vercauteren, Tom

King's College London

Source-Relaxed Domain Adaptation for Image Segmentation

Bateson, Mathilde; Kervadec, Hoel; Dolz, Jose; Lombaert, Hervé; Ben Ayed, Ismail

ETS Montréal

Region-of-interest guided Supervoxel Inpainting for Self-supervision

Kayal, Subhradeep; Chen, Shuai; de Bruijne, Marleen

Erasmus MC

Harnessing Uncertainty in Domain Adaptation for MRI Prostate Lesion Segmentation

Chiou, Eleni; Giganti, Francesco; Punwani, Shonit; Kokkinos, Iasonas; Panagiotaki, Eleftheria

University College London

5th Oct : 15:30 UTC
Semi-supervised Learning C

Deep Q-Network-Driven Catheter Segmentation in 3D US by Hybrid Constrained Semi-Supervised Learning and Dual-UNet

Yang, Hongxu; Shan, Caifeng; Kolen, Alexander F.; de With, P. H. N.

Eindhoven University of Technology

Domain Adaptive Relational Reasoning for 3D Multi-Organ Segmentation

Fu, Shuhao; Lu, Yongyi; Wang, Yan; Zhou, Yuyin; Shen, Wei; Fishman, Elliot K.; Yuille, Alan

Johns Hopkins University

Realistic Adversarial Data Augmentation for MR Image Segmentation

Chen, Chen; Qin, Chen; Qiu, Huaqi; Ouyang, Cheng; Wang, Shuo; Chen, Liang; Tarroni, Giacomo; Bai, Wenjia; Rueckert, Daniel

Imperial College London

Learning to Segment Anatomical Structures Accurately from One Exemplar

Lu, Yuhang; Li, Weijian; Zheng, Kang; Wang, Yirui; Harrison, Adam P.; Lin, Chihung; Wang, Song; Xiao, Jing; Lu, Le; Chang-Fu, Kuo; Miao, Shun

University of South Carolina

Uncertainty estimates as data selection criteria to boost omni-supervised learning

Venturini, Lorenzo; Papageorghiou, Aris T.; Noble, J. Alison; Namburete, Ana I.L.

University of Oxford

Extreme Consistency: Overcoming Annotation Scarcity and Domain Shifts

Fotedar, Gaurav; Tajbakhsh, Nima; Pundi Ananth, Shilpa; Ding, Xiaowei

Voxelcloud

Spatio-temporal Consistency and Negative LabelTransfer for 3D freehand US Segmentation

Gonzalez Duque, Vanessa; Al Chanti, Dawood; Crouzier, Marion; Nordez, Antoine; Lacourpaille, Lilian; Mateus, Diana

LS2N

5th Oct : 16:00 UTC
Machine Learning Applications A

Joint Modeling of Chest Radiographs and Radiology Reports for Pulmonary Edema Assessment

Chauhan, Geeticka; Liao, Ruizhi; Wells III, William M.; Andreas, Jacob; Wang, Xin; Berkowitz, Seth; Horng, Steven; Szolovits, Peter; Golland, Polina

Massachusetts Institute of Technology

Domain-specific loss design for unsupervised physical training: A new approach to modeling medical ML solutions

Burwinkel, Hendrik; Matz, Holger; Saur, Stefan; Hauger, Christoph; Evren, Ayse Mine; Hirnschall, Nino; Findl, Oliver; Navab, Nassir; Ahmadi, Seyed-Ahmad

TU München

Multiatlas Calibration of Biophysical Brain Tumor Growth Models with Mass Effect

Subramanian, Shashank; Scheufele, Klaudius; Himthani, Naveen; Biros, George

University of Texas at Austin

Chest X-ray Report Generation through Fine-Grained Label Learning

Syeda-Mahmood, Tanveer; Wong, Ken C. L.; Gur, Yaniv; Wu, Joy T.; Jadhav, Ashutosh; Kashyap, Satyananda; Karargyris, Alexandros; Pillai, Anup; Sharma, Arjun; Syed, Ali Bin; Boyko, Orest; Moradi, Mehdi

IBM Research

Spatial Semantic-Preserving Latent Space Learning for Accelerated DWI Diagnostic Report Generation

Gasimova, Aydan; Seegoolam, Gavin; Chen, Liang; Bentley, Paul; Rueckert, Daniel

Imperial College London

Peri-Diagnostic Decision Support Through Cost-Efficient Feature Acquisition at Test-Time

Vivar, Gerome; Mullakaeva, Kamilia; Zwergal, Andreas; Navab, Nassir; Ahmadi, Seyed-Ahmad

TUM

A Deep Bayesian Video Analysis Framework: Towards a More Robust Estimation of Ejection Fraction

Kazemi Esfeh, Mohammad Mahdi; Luong, Christina; Behnami, Delaram; Tsang, Teresa ; Abolmaesumi, Purang

University of British Columbia

5th Oct : 15:00 UTC
CAI - Video Image Analysis A

ISINet: An Instance-Based Approach for Surgical Instrument Segmentation

González, Cristina; Bravo-Sánchez, Laura; Arbeláez, Pablo

Universidad de los Andes

Reliable Liver Fibrosis Assessment from Ultrasound using Global Hetero-Image Fusion and View-Specific Parameterization

Li, Bowen; Yan, Ke; Tai, Dar-In; Huo, Yuankai; Lu, Le; Xiao, Jing; Harrison, Adam P.

PAII Inc.

Toward Rapid Stroke Diagnosis with Multimodal Deep Learning

Yu, Mingli; Cai, Tongan; Huang, Xiaolei; Wong, Kelvin; Volpi, John; Wang, James Z.; Wong, Stephen T.C.

The Pennsylvania State University

Learning and Reasoning with the Graph Structure Representation in Robotic Surgery

Islam, Mobarakol; Seenivasan, Lalithkumar; Lim, Chwee Ming; Ren, Hongliang

Imperial College London

Vision-based Estimation of MDS-UPDRS Gait Scores for Assessing Parkinson's Disease Motor Severity

Lu, Mandy; Poston, Kathleen; Pfefferbaum, Adolf; Sullivan, Edith V.; Fei-Fei, Li; Pohl, Kilian M.; Niebles, Juan Carlos; Adeli, Ehsan

Stanford University

Searching for Efficient Architecture for Instrument Segmentation in Robotic Surgery

Pakhomov, Daniil; Navab, Nassir

Johns Hopkins University

5th Oct : 15:30 UTC
CAI - Instrumentation and Surgical Phase Detection

TeCNO: Surgical Phase Recognition with Multi-Stage Temporal Convolutional Networks

Czempiel, Tobias; Paschali, Magdalini; Keicher, Matthias; Simson, Walter; Feussner, Hubertus; Kim, Seong Tae; Navab, Nassir

Technical University of Munich

Surgical Video Motion Magnification with Suppression of Instrument Artefacts

Janatka, Mirek; Marcus, Hani J.; Dorward, Neil L.; Stoyanov, Danail

UCL

Recognition of Instrument-Tissue Interactions in Endoscopic Videos via Action Triplets

Nwoye, Chinedu Innocent; Gonzalez, Cristians; Yu, Tong; Mascagni, Pietro; Mutter, Didier; Marescaux, Jacques; Padoy, Nicolas

University of Strasbourg

AutoSNAP: Automatically Learning Neural Architectures for Instrument Pose Estimation

Kügler, David; Uecker, Marc; Kuijper, Arjan; Mukhopadhyay, Anirban

German Center for Neurodegenerative Diseases

Automatic Operating Room Surgical Activity Recognition for Robot-Assisted Surgery

Sharghi, Aidean; Haugerud, Helene; Oh, Daniel; Mohareri, Omid

Intuitive Surgical Inc.

5th Oct : 16:00 UTC
CAI Applications A

Reconstructing Sinus Anatomy from Endoscopic Video -- Towards a Radiation-free Approach for Quantitative Longitudinal Assessment

Liu, Xingtong; Stiber, Maia; Huang, Jindan; Ishii, Masaru; Hager, Gregory D.; Taylor, Russell H.; Unberath, Mathias

Johns Hopkins University

Inertial Measurements for Motion Compensation in Weight-bearing Cone-beam CT of the Knee

Maier, Jennifer; Nitschke, Marlies; Choi, Jang-Hwan; Gold, Garry; Fahrig, Rebecca; Eskofier, Bjoern M.; Maier, Andreas

Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU

Feasibility check: can audio be a simple alternative to force-based feedback for needle guidance?

Illanes, Alfredo; Boese, Axel; Friebe, Michael; Hansen, Christian

Otto von Guericke University Magdeburg

A Graph-Based Method for Optimal Active Electrode Selection in Cochlear Implants

Bratu, Erin; Dwyer, Robert; Noble, Jack

Vanderbilt University

Improved resection margins in surgical oncology using intraoperative mass spectrometry

Jamzad, Amoon; Sedghi, Alireza; Santilli, Alice M.L.; Janssen, Natasja N.Y.; Kaufmann, Martin; Ren, Kevin Y.M.; Vanderbeck, Kaitlin; Wang, Ami; McKay, Doug; Rudan, John F.; Fichtinger, Gabor; Mousavi, Parvin

Queen's University

Self-Supervsied Domain Adaptation for Patient-Specific, Real-Time Tissue Tracking

Ihler, Sontje; Kuhnke, Felix; Laves, Max-Heinrich; Ortmaier, Tobias

Leibniz University Hannover

An Interactive Mixed Reality Platform for Bedside Surgical Procedures

Azimi, Ehsan; Niu, Zhiyuan; Stiber, Maia; Greene, Nicholas; Liu, Ruby; Molina, Camilo; Huang, Judy; Huang, Chien-Ming; Kazanzides, Peter

Johns Hopkins University

5th Oct : 15:00 UTC
Image Reconstruction A

Improving Amide Proton Transfer-weighted MRI Reconstruction using T2-weighted Images

Wang, Puyang; Guo, Pengfei; Lu, Jianhua; Zhou, Jinyuan; Jiang, Shanshan; Patel, Vishal M.

Johns Hopkins University

Collimatorless Scintigraphy for Imaging Extremely Low Activity Targeted Alpha Therapy (TAT) with Weighted Robust Least Square (WRLS)

Zheng, Yifan; Huh, Yoonsuk; Su, Qianqian; Wang, Jiaming; Lin, Yunduan; Vetter, Kai; Seo, Youngho

UC Berkeley

Compressive MR Fingerprinting reconstruction with Neural Proximal Gradient iterations

Chen, Dongdong; Davies, Mike E.; Golbabaee, Mohammad

University of Edinburgh

Active MR k-space Sampling with Reinforcement Learning

Pineda, Luis; Basu, Sumana; Romero, Adriana; Calandra, Roberto; Drozdzal, Michal

FAIR

Fast Correction of Eddy-Current and Susceptibility-Induced Distortions Using Rotation-Invariant Contrasts

Ahmad, Sahar; Wu, Ye; Huynh, Khoi Minh; Thung, Kim-Han; Lin, Weili; Shen, Dinggang; Yap, Pew-Thian; the UNC/UMN Baby Connectome Project Consortium

University of North Carolina at Chapel Hill

Joint reconstruction and bias field correction for undersampled MR imaging

Gaillochet, Mélanie; Tezcan, Kerem Can; Konukoglu, Ender

ETH Zurich

Joint Total Variation ESTATICS for Robust Multi-Parameter Mapping

Balbastre, Yaël; Brudfors, Mikael; Azzarito, Michela; Lambert, Christian; Callaghan, Martina F.; Ashburner, John

University College London

End-to-End Variational Networks for Accelerated MRI Reconstruction

Sriram, Anuroop; Zbontar, Jure; Murrell, Tullie; Defazio, Aaron; Zitnick, C. Lawrence; Yakubova, Nafissa; Knoll, Florian; Johnson, Patricia

Facebook AI Research

5th Oct : 15:30 UTC
Image Reconstruction B

3d-SMRnet: Achieving a new quality of MPI system matrix recovery by deep learning

Baltruschat, Ivo M.; Szwargulski, Patryk; Griese, Florian; Grosser, Mirco; Werner, René; Knoop, Tobias

University Medical Center Hamburg-Eppendorf

MRI Image Reconstruction via Learning Optimization Using Neural ODEs

Chen, Eric Z.; Chen, Terrence; Sun, Shanhui

United Imaging Intelligence America

An evolutionary framework for microstructure-sensitive generalized diffusion gradient waveforms

Truffet, Raphaël; Rafael-Patino, Jonathan; Girard, Gabriel; Pizzolato, Marco; Barillot, Christian; Thiran, Jean-Philippe; Caruyer, Emmanuel

Univ Rennes

Lesion Mask-based Simultaneous Synthesis of Anatomic and Molecular MR Images using a GAN

Guo, Pengfei; Wang, Puyang; Zhou, Jinyuan; Patel, Vishal M.; Jiang, Shanshan

Johns Hopkins University

T2 Mapping from Super-Resolution-Reconstructed Clinical Fast Spin Echo Magnetic Resonance Acquisitions

Lajous, Hélène; Hilbert, Tom; Roy, Christopher W.; Tourbier, Sébastien; de Dumast, Priscille; Yu, Thomas; Thiran, Jean-Philippe; Ledoux, Jean-Baptiste; Piccini, Davide; Hagmann, Patric;

Meuli, Reto; Kober, Tobias; Stuber, Matthias; van Heeswijk, Ruud B.; Bach Cuadra, Meritxell

University of Lausanne (UNIL

Learned Proximal Networks for Quantitative Susceptibility Mapping

Lai, Kuo-Wei; Aggarwal, Manisha; van Zijl, Peter; Li, Xu; Sulam, Jeremias

Johns Hopkins University

Learning A Gradient Guidance for Spatially Isotropic MRI Super-Resolution Reconstruction

Sui, Yao; Afacan, Onur; Gholipour, Ali; Warfield, Simon K.

Harvard Medical School

6th Oct : 10:30 UTC
Colonoscopy

Adaptive Context Selection for Polyp Segmentation

Zhang, Ruifei; Li, Guanbin; Li, Zhen; Cui, Shuguang; Qian, Dahong; Yu, Yizhou

Sun Yat-sen University

PraNet: Parallel Reverse Attention Network for Polyp Segmentation

Fan, Deng-Ping; Ji, Ge-Peng; Zhou, Tao; Chen, Geng; Fu, Huazhu; Shen, Jianbing; Shao, Ling

Inception Institute of Artificial Intelligence

Few-Shot Anomaly Detection for Polyp Frames from Colonoscopy

Tian, Yu; Maicas, Gabriel; Zorron Cheng Tao Pu, Leonardo; Singh, Rajvinder; Verjans, Johan; Carneiro, Gustavo

Australian Institute for Machine Learning

PolypSeg: an Efficient Context-aware Network for Polyp Segmentation from Colonoscopy Videos

Zhong, Jiafu; Wang, Wei; Wu, Huisi; Wen, Zhenkun; Qin, Jing

Shenzhen University

Endoscopic polyp segmentation using a hybrid 2D/3D CNN

González-Bueno Puyal, Juana; Bhatia, Kanwal K.; Brandao, Patrick; Ahmad, Omer F.; Toth, Daniel; Kader, Rawen; Lovat, Laurence; Mountney, Peter; Stoyanov, Danail

University College London

6th Oct : 11:00 UTC
Biological/Optical/Microscopic Imaging C

Segmenting Continuous but Sparsely-Labeled Structures in Super-Resolution Microscopy Using Perceptual Grouping

Li, Jiabing; Artur, Camille; Eriksen, Jason; Roysam, Badrinath; Mayerich, David

University of Houston

DISCo: Deep learning, Instance Segmentation, and Correlations for cell segmentation in calcium imaging

Kirschbaum, Elke; Bailoni, Alberto; Hamprecht, Fred A.

Amazon Research

Isotropic Reconstruction of 3D EM Images with Unsupervised Degradation Learning

Deng, Shiyu; Fu, Xueyang; Xiong, Zhiwei; Chen, Chang; Liu, Dong; Chen, Xuejin; Ling, Qing; Wu, Feng

University of Science and Technology of China

Background and illumination correction for time-lapse microscopy data with correlated foreground

Peng, Tingying; Lamm, Lorenz; Loeffler, Dirk; Ahmed, Nouraiz; Navab, Nassir; Schroeder, Timm; Marr, Carsten

TUM

Joint Spatial-Wavelet Dual-Stream Network for Super-Resolution

Chen, Zhen; Guo, Xiaoqing; Yang, Chen; Ibragimov, Bulat; Yuan, Yixuan

City University of Hong Kong

Towards Neuron Segmentation from Macaque Brain Images: A Weakly Supervised Approach

Dong, Meng; Liu, Dong; Xiong, Zhiwei; Chen, Xuejin; Zhang, Yueyi; Zha, Zheng-Jun; Bi, Guoqiang; Wu, Feng

University of Science and Technology of China

6th Oct : 11:30 UTC
Biological/Optical/Microscopic Imaging D

3D Reconstruction and Segmentation of Dissection Photographs for MRI-free Neuropathology

Tregidgo, Henry F. J.; Casamitjana, Adrià; Latimer, Caitlin; Kilgore, Mitchell; Robinson, Eleanor; Blackburn, Emily; Van Leemput, Koen; Fischl, Bruce; Dalca, Adrian V.; Mac Donald, Christine; Keene, C. Dirk; Iglesias, Juan Eugenio

University College London

DistNet: Deep Tracking by displacement regression: application to bacteria growing in the Mother Machine

Ollion, Jean; Ollion, Charles

Laboratoire Jean Perrin

A weakly supervised deep learning approach for detecting malaria and sickle cell anemia in blood films

Manescu, Petru; Bendkowski, Christopher; Claveau, Remy; Elmi, Muna; Brown, Biobele J.; Pawar, Vijay; Shaw, Mike J.; Fernandez-Reyes, Delmiro

UCL

Imaging Scattering Characteristics of Tissue in Transmitted Microscopy

Shimano, Mihoko; Asano, Yuta; Ishihara, Shin; Bise, Ryoma ; Sato, Imari

National Institute of Informatics

Attention based multiple instance learning for classification of blood cell disorders

Sadafi, Ario; Makhro, Asya; Bogdanova, Anna; Navab, Nassir; Peng, Tingying; Albarqouni, Shadi; Marr, Carsten

Helmholtz Zentrum München

A generative modeling approach for interpreting population-level variability in brain structure

Liu, Ran; Subakan, Cem; Balwani, Aishwarya H.; Whitesell, Jennifer; Harries, Julie; Koyejo, Sanmi; Dyer, Eva L.

Georgia Institute of Technology

Processing-Aware Real-Time Rendering for Optimized Tissue Visualization in Intraoperative 4D OCT

Weiss, Jakob; Sommersperger, Michael; Nasseri, Ali; Eslami, Abouzar; Eck, Ulrich; Navab, Nassir

TUM

6th Oct : 10:30 UTC
Machine Learning Applications B

Distractor-Aware Neuron Intrinsic Learning for Generic 2D Medical Image Classifications

Gong, Lijun; Ma, Kai; Zheng, Yefeng

Tencent

Large-scale inference of liver fat with neural networks on UK Biobank body MRI

Langner, Taro; Strand, Robin; Ahlström, Håkan; Kullberg, Joel

Uppsala University

BUNET: Blind Medical Image Segmentation Based on Secure UNET

Bian, Song; Xu, Xiaowei; Jiang, Weiwen; Shi, Yiyu; Sato, Takashi

Kyoto University

Temporal-consistent Segmentation of Echocardiography with Co-learning from Appearance and Shape

Wei, Hongrong; Cao, Heng; Cao, Yiqin; Zhou, Yongjin; Xue, Wufeng; Ni, Dong; Li, Shuo

Shenzhen University

Decision Support for Intoxication Prediction Using Graph Convolutional Networks

Burwinkel, Hendrik; Keicher, Matthias; Bani-Harouni, David; Zellner, Tobias; Eyer, Florian; Navab, Nassir; Ahmadi, Seyed-Ahmad

TU München

Latent-Graph Learning for Disease Prediction

Cosmo, Luca; Kazi, Anees; Ahmadi, Seyed-Ahmad; Navab, Nassir; Bronstein, Michael

University of Lugano, Switzerland

6th Oct : 11:00 UTC

Domain Adaptation A

Improve Unseen Domain Generalization via Enhanced Local Color Transformation and Augmentation

Xiong, Jianhao; He, Andre Wang; Fu, Meng; Hu, Xinyue; Zhang, Yifan; Liu, Congxin; Zhao, Xin; Ge, Zongyuan

Monash

Transport-based Joint Distribution Alignment for Multi-site Autism Spectrum Disorder Diagnosis using Resting-state fMRI

Zhang, Junyi; Wan, Peng; Zhang, Daoqiang

Nanjing University of Aeronautics and Astronautics, China

Automatic and interpretable model for periodontitis diagnosis in panoramic radiographs

Li, Haoyang; Zhou, Juexiao; Zhou, Yi; Chen, Jieyu; Gao, Feng; Xu, Ying; Gao, Xin

KAUST

Residual-CycleGAN based Camera Adaptation for Robust Diabetic Retinopathy Screening

Yang, Dalu; Yang, Yehui; Huang, Tiantian; Wu, Binghong; Wang, Lei; Xu, Yanwu

Baidu Inc.

6th Oct : 11:30 UTC
Domain Adaptation B

Shape-aware Meta-learning for Generalizing Prostate MRI Segmentation to Unseen Domains

Liu, Quande; Dou, Qi; Heng, Pheng-Ann

The Chinese University of Hong Kong

Automatic Plane Adjustment of Orthopedic Intraoperative Flat Panel Detector CT-Volumes

Martin Vicario, Celia; Kordon, Florian; Denzinger, Felix; Weiten, Markus; Thomas, Sarina; Kausch, Lisa; Franke, Jochen; Keil, Holger; Maier, Andreas; Kunze, Holger

Friedrich-Alexander-Universität Erlangen-Nürnberg

Unsupervised Graph Domain Adaptation for Neurodevelopmental Disorders Diagnosis

Wang, Bomin; Liu, Zhi; Li, Yujun; Xiao, Xiaoyan; Zhang, Ranran; Cao, Yankun; Cui, Lizhen; Zhang, Pengfei

Shandong University

JBFnet - Low Dose CT Denoising by Trainable Joint Bilateral Filtering

Patwari, Mayank; Gutjahr, Ralf; Raupach, Rainer; Maier, Andreas

Siemens Healthineers

MI^2GAN: Generative Adversarial Network for Medical Image Domain Adaptation using Mutual Information Constraint

Xie, Xinpeng; Chen, Jiawei; Li, Yuexiang; Shen, Linlin; Ma, Kai; Zheng, Yefeng

Youtu Lab, Tencent

6th Oct : 10:30 UTC
Advances in Machine Learning Theory A

Dual-level Selective Transfer Learning for Intrahepatic Cholangiocarcinoma Segmentation in Non-enhanced Abdominal CT

Wang, Wenzhe; Song, Qingyu; Zhou, Jiarong; Feng, Ruiwei; Chen, Tingting; Ge, Wenhao; Chen, Danny Z.; Zhou, S. Kevin; Wang, Weilin; Wu, Jian

Zhejiang University

BiO-Net: Learning Recurrent Bi-directional Connections for Encoder-Decoder Architecture

Xiang, Tiange; Zhang, Chaoyi; Liu, Dongnan; Song, Yang; Huang, Heng; Cai, Weidong

University of Sydney

Constrain Latent Space for Schizophrenia Classification via Dual Space Mapping Net

Shi, Weiyang; Xu, Kaibin; Song, Ming; Fan, Lingzhong; Jiang, Tianzi
Institute of Automation Chinese Academy of Sciences; University of Chinese Academy of Sciences

Have you forgotten? A method to assess ifmachine learning models have forgotten data

Liu, Xiao; Tsaftaris, Sotirios A.

University of Edinburgh

Learning and Exploiting Interclass Visual Correlations for Medical Image Classification

Wei, Dong; Cao, Shilei; Ma, Kai; Zheng, Yefeng

Tencent Jarvis Lab

Feature Preserving Smoothing Provides Simple and Effective Data Augmentation for Medical Image Segmentation

Sheikh, Rasha; Schultz, Thomas

University of Bonn

Deep kNN for Medical Image Classification

Zhuang, Jiaxin; Cai, Jiabin; Wang, Ruixuan; Zhang, Jianguo; Zheng, Wei-Shi

Sun Yat-sen University

6th Oct : 11:00 UTC
Student/Teacher Networks

Characterizing Label Errors: Confident Learning for Noisy-labeled Image Segmentation

Zhang, Minqing; Gao, Jiantao; Lyu, Zhen; Zhao, Weibing; Wang, Qin; Ding, Weizhen; Wang, Sheng; Li, Zhen; Cui, Shuguang

Shenzhen Research Institute of Big Data, The Chinese University of Hong Kong, Shenzhen

Leveraging Undiagnosed Data for Glaucoma Classification with Teacher-Student Learning

Wu, Junde; Yu, Shuang; Chen, Wenting; Ma, Kai; Fu, Rao; Liu, Hanruo; Di, Xiaoguang; Zheng, Yefeng

Tencent

Difficulty-aware Glaucoma Classification with Multi-Rater Consensus Modeling

Yu, Shuang; Zhou, Hong-Yu; Ma, Kai; Bian, Cheng; Chu, Chunyan; Liu, Hanruo; Zheng, Yefeng

Tencent

Intra-operative Forecasting of Growth Modulation Spine Surgery Outcomes with Spatio-Temporal Dynamic Networks

Mandel, William; Parent, Stefan; Kadoury, Samuel

Ecole Polytechnique de Montreal, Canada

Self-supervision on Unlabelled OR Data for Multi-person 2D/3D Human Pose Estimation

Srivastav, Vinkle; Gangi, Afshin; Padoy, Nicolas

University of Strasbourg

Knowledge distillation from multi-modal to mono-modal segmentation networks

Hu, Minhao; Maillard, Matthis; Zhang, Ya; Ciceri, Tommaso; La Barbera, Giammarco; Bloch, Isabelle; Gori, Pietro

Shanghai Jiao Tong University

6th Oct : 11:30 UTC
Learning Methodologies

Meta Corrupted Pixels Mining for Medical Image Segmentation

Wang, Jixin; Zhou, Sanping; Fang, Chaowei; Wang, Le; Wang, Jinjun

Xi'an JiaoTong University

UXNet: Searching Multi-level Feature Aggregation for 3D Medical Image Segmentation

Ji, Yuanfeng; Zhang, Ruimao; Li, Zhen; Ren, Jiamin; Zhang, Shaoting; Luo, ping

City University of Hong Kong

Difficulty-aware Meta-learning for Rare Disease Diagnosis

Li, Xiaomeng; Yu, Lequan; Jin, Yueming; Fu, Chi-Wing; Xing, Lei; Heng, Pheng-Ann

Stanford University

Few Is Enough: Task-Augmented Active Meta-Learning for Brain Cell Classification

Yuan, Pengyu; Mobiny, Aryan; Jahanipour, Jahandar; Li, Xiaoyang; Cicalese, Pietro Antonio; Roysam, Badrinath; Patel, Vishal M.; Dragan, Maric; Nguyen, Hien Van

University of Houston

Automatic Data Augmentation for 3D Medical Image Segmentation

Xu, Ju; Li, Mengzhang; Zhu, Zhanxing

Peking University

MS-NAS: Multi-Scale Neural Architecture Search for Medical Image Segmentation

Yan, Xingang; Jiang, Weiwen; Shi, Yiyu; Zhuo, Cheng

ZheJiang University

Comparing to Learn: Surpassing ImageNet Pretraining on Radiographs By Comparing Image Representations

Zhou, Hong-Yu; Yu, Shuang; Bian, Cheng; Hu, Yifan; Ma, Kai; Zheng, Yefeng

Tencent

6th Oct : 10:30 UTC
CAI Applications B

Ear Cartilage Inference for Reconstructive Surgery with Convolutional Mesh Autoencoders

O' Sullivan, Eimear M; Van de Lande, Lara; Osolos, Antonia; Schievano, Silvia; Dunaway, David; Bulstrode, Neil; Zafeiriou, Stefanos

Imperial College London

Robust Multi-modal 3D Patient Body Modeling

Yang, Fan; Li, Ren; Georgakis, Georgios; Karanam, Srikrishna ; Chen, Terrence; Ling, Haibin; Wu, Ziyan

Temple University

A New Electromagnetic-Video Endoscope Tracking Method via Anatomical Constraints and Historically Observed Differential Evolution

Luo, Xiongbiao

Xiamen University

Malocclusion Treatment Planning via PointNet based Spatial Transformation Network

Li, Xiaoshuang; Bi, Lei; Kim, Jinman; Li, Tingyao; Li, Peng; Tian, Ye; Sheng, Bin; Feng, Dagan

Shanghai Jiao Tong University

Simulation of Brain Resection for Cavity Segmentation Using Self-Supervised and Semi-Supervised Learning

Pérez-García, Fernando; Rodionov, Roman; Alim-Marvasti, Ali; Sparks, Rachel; Duncan, John S.; Ourselin, Sébastien

University College London

Local Contractive Registration for Quantification of Tissue Shrinkage in Assessment of Microwave Ablation

Liu, Dingkun; Fu, Tianyu; Ai, Danni; Fan, Jingfan; Hong, Song; Yang, Jian

Beijing Institute of Technology

Reinforcement Learning of Musculoskeletal Control from Functional Simulations

Joos, Emanuel ; Péan, Fabien; Goksel, Orcun

ETH Zurich

6th Oct : 11:00 UTC
Shape Models and Landmark Detection A

Graph Reasoning and Shape Constraints for Cardiac Segmentation in Congenital Heart Defect

Liu, Tao; Tian, Yun; Zhao, Shifeng; Huang, Xiaoying

Beijing Normal University

Nonlinear Regression on Manifolds for Shape Analysis using Intrinsic Bézier Splines

Hanik, Martin; Hege, Hans-Christian; Hennemuth, Anja; von Tycowicz, Christoph

Zuse Institute Berlin

Self-Supervised Discovery of Anatomical Shape Landmarks

Bhalodia, Riddhish; Kavan, Ladislav; Whitaker, Ross T.

Scientific Computing and Imaging Institute, University of Utah

Shape Mask Generator: Learning to Refine Shape Priors for Segmenting Overlapping Cervical Cytoplasms

Song, Youyi; Zhu, Lei; Lei, Baiying; Sheng, Bin; Dou, Qi; Qin, Jing; Choi, Kup-Sze

The Hong Kong Polytechnic University

Prostate motion modelling using biomechanically-trained deep neural networks on unstructured nodes

Saeed, Shaheer U.; Taylor, Zeike A.; Pinnock, Mark A.; Emberton, Mark; Barratt, Dean C.; Hu, Yipeng

University College London

Deep Learning Assisted Automatic Intra-operative 3D Aortic Deformation Reconstruction

Zhang, Yanhao; Falque, Raphael; Zhao, Liang; Huang, Shoudong; Hu, Boni

Centre for Autonomous Systems, University of Technology Sydney

Landmarks Detection with Anatomical Constraints for Total Hip Arthroplasty Preoperative Measurements

Liu, Wei; Wang, Yu; Tao, Jiang; Chi, Ying; Zhang, Lei; Hua, Xian-Sheng

DAMO Academy, Alibaba Group

6th Oct : 11:30 UTC
Shape Models and Landmark Detection B

Instantiation-Net: 3D Mesh Reconstruction from Single 2D Image for Right Ventricle

Wang, Zhao-yang; Zhou, Xiao-Yun; Li, Peichao; Theodoreli-Riga, Celia; Yang, Guang-Zhong

King's College London

Miss the point: Targeted adversarial attack on multiple landmark detection

Yao, Qingsong; He, Zecheng; Han, Hu; Zhou, S. Kevin

Institute of Computing Technology, Chinese Academ

Automatic Tooth Segmentation and Dense Correspondence of 3D Dental Model

Sun, Diya; Pei, Yuru; Li, Peixin; Song, Guangying; Guo, Yuke; Zha, Hongbin; Xu, Tianmin

Peking University

Move over there: One-click deformation correction for image fusion during endovascular aortic repair

Breininger, Katharina; Pfister, Marcus; Kowarschik, Markus; Maier, Andreas

Pattern Recognition Lab, Friedrich-Alexander-Universität Erlangen-Nürnberg

Non-Rigid Volume to Surface Registration using a Data-Driven Biomechanical Model

Pfeiffer, Micha; Riediger, Carina; Leger, Stefan; Kühn, Jens-Peter; Seppelt, Danilo; Hoffmann, Ralf-Thorsten; Weitz, Jürgen; Speidel, Stefanie

National Center for Tumor Diseases (NCT

Deformation Aware Augmented Reality for Craniotomy using 3D/2D Non-rigid Registration of Cortical Vessels

Haouchine, Nazim; Juvekar, Parikshit; Wells III, William M.; Cotin, Stephane; Golby, Alexandra; Frisken, Sarah

Brigham and Women's Hospital, Harvard Medical School

Skip-StyleGAN: Skip-connected Generative Adversarial Networks for Generating 3D Rendered Image of Hand Bone Complex

Ahn, Jaesin; Lee, Hyun-Joo; Choi, Inchul; Lee, Minho

Kyungpook National University

6th Oct : 10:30 UTC
Segmentation - Cardiac

Efficient and Phase-aware Video Super-resolution for Cardiac MRI

Lin, Jhih-Yuan; Chang, Yu-Cheng; Hsu, Winston H.

National Taiwan University

ImageCHD: A 3D Computed Tomography Image Dataset for Classification of Congenital Heart Disease

Xu, Xiaowei; Wang, Tianchen; Zhuang, Jian; Yuan, Haiyun; Huang, Meiping; Jia, Qianjun; cen, Jianzheng; Dong, Yuhao; Shi, Yiyu

Guangdong Provincial People's Hospital

Deep Generative Model-based Quality Control for Cardiac MRI Segmentation

Wang, Shuo; Tarroni, Giacomo; Qin, Chen; Mo, Yuanhan; Dai, Chengliang; Chen, Chen; Glocker, Ben; Guo, Yike; Rueckert, Daniel; Bai, Wenjia

Imperial College London

DeU-Net: Deformable U-Net for 3D Cardiac MRI Video Segmentation

Dong, Shunjie; Zhao, Jinlong; Zhang, Maojun; Shi, Zhengxue; Deng, Jianing; Shi, Yiyu; Tian, Mei; Zhuo, Cheng

Zhejiang University

Learning Directional Feature Maps for Cardiac MRI Segmentation

Cheng, Feng; Chen, Cheng; Wang, Yukang; Shi, Heshui; Cao, Yukun; Tu, Dandan; Zhang, Changzheng; Xu, Yongchao

Huazhong University of Science and Technology

Joint Left Atrial Segmentation and Scar Quantification Based on a DNN with Spatial Encoding and Shape Attention

Li, Lei; Weng, Xin; Schnabel, Julia A.; Zhuang, Xiahai

Shanghai Jiao Tong University

XCAT-GAN for Synthesizing 3D Consistent Labeled Cardiac MR Images on Anatomically Variable XCAT Phantoms

Amirrajab, Sina; Abbasi-Sureshjani, Samaneh; Al Khalil, Yasmina; Lorenz, Cristian; Weese, Jürgen; Pluim, Josien; Breeuwer, Marcel

Eindhoven University of Technology

6th Oct : 11:00 UTC
Angiography and Vessel Analysis A

Lightweight Double Attention-fused Networks for Intraoperative Stent Segmentation

Zhou, Yan-Jie; Xie, Xiaoliang; Hou, Zeng-Guang; Zhou, Xiao-Hu; Bian, Gui-Bin; Liu, Shiqi

Institute of Automation, Chinese Academy of Sciences

TopNet: Topology Preserving Metric Learning for Vessel Tree Reconstruction and Labelling

Keshwani, Deepak; Kitamura, Yoshiro; Ihara, Satoshi; Iizuka, Satoshi; Simo-Serra, Edgar

FujiFilm Corporation

Learning Hybrid Representations for Automatic 3D Vessel Centerline Extraction

He, Jiafa; Pan, Chengwei; Yang, Can; Zhang, Ming; Wang, Yang; Zhou, Xiaowei; Yu, Yizhou

The Hong Kong University of Science and Technology

Branch-aware Double DQN for Centerline Extraction in Coronary CT Angiography

Zhang, Yuyang; Luo, Gongning; Wang, Wei; Wang, Kuanquan

Harbin Institute of Technology

Automatic CAD-RADS Scoring from CCTA Scans using Deep Learning

Denzinger, Felix; Wels, Michael; Breininger, Katharina; Gülsün, Mehmet A.; Schöbinger, Max; André, Florian; Buß, Sebastian; Görich, Johannes; Sühling, Michael; Maier, Andreas

Friedrich-Alexander University Erlangen-Nürnberg

Higher-Order Flux with Spherical Harmonics Transform for Vascular Analysis

Wang, Jierong; Chung, Albert C. S.

The Hong Kong University of Science and Technology

Cerebrovascular Segmentation in MRA via Reverse Edge Attention Network

Zhang, Hao; Xia, Likun; Song, Ran; Yang, Jianlong; Hao, Huaying; Liu, Jiang; Zhao, Yitian

Cixi Institute of Biomedical Engineering, Ningbo Institute of Industrial Technology, Chinese Academy of Sciences

6th Oct : 11:30 UTC
Segmentation - Retinal

An Elastic Interaction Based-Loss Function for Medical Image Segmentation

Lan, Yuan; Xiang, Yang; Zhang, Luchan

HKUST

Retinal Image Segmentation with a Structure-Texture Demixing Network

Zhang, Shihao; Fu, Huazhu; Xu, Yanwu; Liu, Yanxia; Tan, Mingkui

South China University of Technology

BEFD: Boundary Enhancement and Feature Denoising for Vessel Segmentation

Zhang, Mo; Yu, Fei; Zhao, Jie; Zhang, Li; Li, Quanzheng

Peking University

Boosting Connectivity in Retinal Vessel Segmentation via a Recursive Semantics-Guided Network

Xu, Rui; Liu, Tiantian; Ye, Xinchen; Lin, Lin; Chen, Yen-Wei

Dalian University of Techonology

RVSeg-Net: an Efficient Feature Pyramid Cascade Network for Retinal Vessel Segmentation

Wang, Wei; Zhong, Jiafu; Wu, Huisi; Wen, Zhenkun; Qin, Jing

Shenzhen University

6th Oct : 10:30 UTC
Segmentation - Oncological A

Bounding Maps for Universal Lesion Detection

Li, Han; Han, Hu; Zhou, S. Kevin

Chinese Academy of Sciences

Multimodal Priors Guided Segmentation of Liver Lesions in MRI Using Mutual Information Based Graph Co-Attention Networks

Mo, Shaocong; Cai, Ming; Lin, Lanfen; Tong, Ruofeng; Chen, Qingqing; Wang, Fang; Hu, Hongjie; Iwamoto, Yutaro; Han, Xian-Hua; Chen, Yen-Wei

Zhejiang University

Mt-UcGAN: Multi-task uncertainty-constrained GAN for joint segmentation, quantification and uncertainty estimation of renal tumors on CT

Ruan, Yanan; Li, Dengwang; Marshall, Harry; Miao, Timothy; Cossetto, Tyler; Chan, Ian; Daher, Omar; Accorsi, Fabio; Goela, Aashish; Li, Shuo

Shandong Normal University

Weakly Supervised Deep Learning for Breast Cancer Segmentation with Coarse Annotations

Zheng, Hao; Zhuang, Zhiguo; Qin, Yulei; Gu, Yun; Yang, Jie; Yang, Guang-Zhong

Shanghai Jiao Tong University

Multi-phase and Multi-level Selective Feature Fusion for Automated Pancreas Segmentation from CT Images

Jiang, Xixi; Luo, Qingqing; Wang, Zhiwei; Mei, Tao; Wen, Yu; Li, Xin; Cheng, Kwang-Ting; Yang, Xin

Huazhong university of science and technology

6th Oct : 11:00 UTC

Prediction and Diagnosis A

MIA-Prognosis: A Deep Learning Framework to Predict Therapy Response

Yang, Jiancheng; Chen, Jiajun; Kuang, Kaiming; Lin, Tiancheng; He, Junjun; Ni, Bingbing

Shanghai Jiao Tong University

M2Net: Multi-modal Multi-channel Network for Overall Survival Time Prediction of Brain Tumor Patients

Zhou, Tao; Fu, Huazhu; Zhang, Yu; Zhang, Changqing; Lu, Xiankai; Shen, Jianbing; Shao, Ling

Inception Institute of Artificial Intelligence, UAE

Automatic Detection of Free Intra-Abdominal Air in Computed Tomography

Taubmann, Oliver; Li, Jingpeng; Denzinger, Felix; Eibenberger, Eva; Müller, Felix C.; Brejnebøl, Mathias W.; Maier, Andreas

Siemens Healthineers

Prediction of Pathological Complete Response to Neoadjuvant Chemotherapy in Breast Cancer Using Deep Learning with Integrative Imaging, Molecular and Demographic Data

Duanmu, Hongyi; Huang, Pauline Boning; Brahmavar, Srinidhi; Lin, Stephanie; Ren, Thomas; Kong, Jun; Wang, Fusheng; Duong, Tim Q

Stony Brook University

Geodesically Smoothed Tensor Features for Pulmonary Hypertension Prognosis using the Heart and Surrounding Tissues

Uthoff, Johanna; Alabed, Samer; Swift, Andrew J.; Lu, Haiping

University of Sheffield

Ovarian Cancer Prediction in Proteomic Data Using Stacked Asymmetric Convolution

Yuan, Cheng; Tang, Yujin; Qian, Dahong

Shanghai Jiao Tong University

6th Oct : 11:30 UTC
Segmentation and CAD

Revisiting 3D Context Modeling with Supervised Pre-training for Universal Lesion Detection in CT Slices

Zhang, Shu; Xu, Jincheng; Chen, Yu-Chun; Ma, Jiechao; Li, Zihao; Wang, Yizhou; Yu, Yizhou

Peking University

Scale-Space Autoencoders for Unsupervised Anomaly Segmentation in Brain MRI

Baur, Christoph; Wiestler, Benedikt; Albarqouni, Shadi; Navab, Nassir

Technische Universität München, Germany

AlignShift: Bridging the Gap of Imaging Thickness in 3D Anisotropic Volumes

Yang, Jiancheng; He, Yi; Huang, Xiaoyang; Xu, Jingwei; Ye, Xiaodan; Tao, Guangyu; Ni, Bingbing

Shanghai Jiao Tong University

One Click Lesion RECIST Measurement and Segmentation on CT Scans

Tang, Youbao; Yan, Ke; Xiao, Jing; Summers, Ronald M.

National Institutes of Health

Automated Detection of Cortical Lesions in Multiple Sclerosis Patients with 7T MRI

La Rosa, Francesco; Beck, Erin; Abdulkadir, Ahmed; Thiran, Jean-Philippe; Reich, Daniel; Sati, Pascal; Bach Cuadra, Meritxell

EPFL

6th Oct : 15:00 UTC
Histopathology Image Analysis C

Graph Attention Multi-instance Learning for Accurate Colorectal Cancer Staging

Raju, Ashwin; Yao, Jiawen; Haq, Mohammad Minhazul; Jonnagaddala, Jitendra; Huang, Junzhou

University of Texas, Arlington

Deep Interactive Learning: An Efficient Labeling Approach for Deep Learning-Based Osteosarcoma Treatment Response Assessment

Ho, David Joon; Agaram, Narasimhan P.; Schüffler, Peter J.; Vanderbilt, Chad M.; Jean, Marc-Henri; Hameed, Meera R.; Fuchs, Thomas J.

Memorial Sloan Kettering Cancer Center

Modeling Histological Patterns for Differential Diagnosis of Atypical Breast Lesions

Parvatikar, Akash; Choudhary, Om; Ramanathan, Arvind; Navolotskaia, Olga; Carter, Gloria; Tosun, Akif Burak; Fine, Jeffrey L.; Chennubhotla, S. Chakra

University of Pittsburgh

Foveation for Segmentation of Mega-pixel Histology Images

Jin, Chen; Tanno, Ryutaro; Xu, Moucheng; Mertzanidou, Thomy; Alexander, Daniel C.

University College London

Multimodal Latent Semantic Alignment for Automated Prostate Tissue Classification and Retrieval

Lara, Juan S.; Contreras O., Victor H.; Otálora, Sebastián; Müller, Henning; Gonzalez, Fabio A.

Universidad Nacional de Colombia

6th Oct : 15:30 UTC
Cell Segmentation and Stain Normalization B

StyPath: Style-Transfer Data Augmentation For Robust Histology Image Classification

Cicalese, Pietro Antonio; Mobiny, Aryan; Yuan, Pengyu; Becker, Jan; Mohan, Chandra; Nguyen, Hien Van

University of Houston

Multimarginal Wasserstein Barycenter for Stain Normalization and Augmentation

Nadeem, Saad; Hollmann, Travis; Tannenbaum, Allen

Memorial Sloan Kettering Cancer Center

Corruption-Robust Enhancement of Deep Neural Networks for Classification of Peripheral Blood Smear Images

Zhang, Songtao; Ni, Qingwen; Li, Bing; Jiang, Shan; Cai, Wenyu; Chen, Hang; Luo, Lin

pku

Multi-Field of View Aggregation and Context Encoding for Single-Stage Nucleus Recognition

Bai, Tian; Xu, Jiayu; Xing, Fuyong

University of Colorado Denver

Self-Supervised Nuclei Segmentation in Histopathological Images Using Attention

Sahasrabudhe, Mihir; Christodoulidis, Stergios; Salgado, Roberto; Michiels, Stefan; Loi, Sherene; Fabrice, André; Paragios, Nikos; Vakalopoulou, Maria

CentraleSupelec

FocusLiteNN: High Efficiency Focus Quality Assessment for Digital Pathology

Wang, Zhongling; Hosseini, Mahdi S.; Miles, Adyn; Plataniotis, Konstantinos N.; Wang, Zhou

University of Waterloo

6th Oct : 15:00 UTC
Neuroimaging B

Spatial Similarity-Aware Learning and Fused Deep Polynomial Network for Detection of Obsessive-Compulsive Disorder

Yang, Peng; Yang, Qiong; Wei, Zhen; Shen, Li; Wang , tianfu ; Peng, Ziwen; Lei, Baiying

Shenzhen University

Deep Representation Learning For Multimodal Brain Networks

Zhang, Wen; Zhan, Liang; Thompson, Paul; Wang, Yalin

Arizona State University

Pooling Regularized Graph Neural Network for fMRI Biomarker Analysis

Li, Xiaoxiao; Zhou, Yuan; Dvornek, Nicha C.; Zhang, Muhan; Zhuang, Juntang; Ventola, Pamela; Duncan, James S.

Princeton University

Patch-based abnormality maps for improved deep learning-based classification of Huntington's disease

Hett, Kilian; Giraud, Rémi; Johnson, Hans; Paulsen, Jane S.; Long, Jeffrey D.; Oguz, Ipek

Vanderbilt University

A Deep Spatial Context Guided Framework for Infant Brain Subcortical Segmentation

Chen, Liangjun; Wu, Zhengwang; Hu, Dan; Wang, Ya; Mo, Zhanhao; Wang, Li; Lin, Weili; Shen, Dinggang; Li, Gang; the UNC/UMN Baby Connectome Project Consortium

UNC Chapel Hill

Modelling the Distribution of 3D Brain MRI using a 2D Slice VAE

Volokitin, Anna; Erdil, Ertunc; Karani, Neerav; Tezcan, Kerem Can; Chen, Xiaoran; Van Gool, Luc; Konukoglu, Ender

ETH Zurich

6th Oct : 15:30 UTC
Functional Brain Networks B

A physics-informed geometric learning model for pathological tau spread in Alzheimer's disease

Song, Tzu-An; Chowdhury, Samadrita Roy; Yang, Fan; Jacobs, Heidi I. L.; Sepulcre, Jorge; Wedeen, Van J.; Johnson, Keith A.; Dutta, Joyita

University of Massachusetts Lowell

A deep pattern recognition approach for inferring respiratory volume fluctuations from fMRI data

Bayrak, Roza .G; Salas, Jorge A.; Huo, Yuankai; Chang, Catie

Vanderbilt University

A Deep-Generative Hybrid Model to Integrate Multimodal and Dynamic Connectivity for Predicting Spectrum-Level Deficits in Autism

D'Souza, Niharika Shimon; Nebel, Mary Beth; Crocetti, Deana; Wymbs, Nicholas; Robinson, Joshua; Mostofsky, Stewart; Venkataraman, Archana

The Johns Hopkins University

Poincare embedding reveals edge-based functional networks of the brain

Gao, Siyuan; Mishne, Gal; Scheinost, Dustin

Yale University

The constrained network-based statistic: a new level of inference for neuroimaging

Noble, Stephanie; Scheinost, Dustin

Yale University

Learning Personal Representations from fMRIby Predicting Neurofeedback Performance

Osin, Jhonathan; Wolf, Lior; Gurevitch, Guy; Keynan, Nimrod Jackob; Fruchtman-Steinbok, Tom; Or-Borichev, Ayelet; Hendler, Talma

Tel Aviv University

A 3D Convolutional Encapsulated Long Short-Term Memory (3DConv-LSTM) Model for Denoising fMRI Data

Zhao, Chongyue; Li, Hongming; Jiao, Zhicheng; Du, Tianming; Fan, Yong

University of Pennsylvania

6th Oct : 16:00 UTC
Functional Brain Networks C

Detecting Changes of Functional Connectivity by Dynamic Graph Embedding Learning

Lin, Yi; Hou, Jia; Laurienti, Paul J.; Wu, Guorong

University of North Carolina at Chapel Hill

Discovering Functional Brain Networks with 3D Residual Autoencoder (ResAE)

Dong, Qinglin; Qiang, Ning; Lv, Jinglei; Li, Xiang; Liu, Tianming; Li, Quanzheng

Massachusetts General Hospitaland and Harvard Medical School

Spatiotemporal Attention Autoencoder (STAAE) for ADHD Classification

Dong, Qinglin; Qiang, Ning; Lv, Jinglei; Li, Xiang; Liu, Tianming; Li, Quanzheng

Massachusetts General Hospitaland and Harvard Medical School

Global Diffeomorphic Phase Alignment of Time-series from Resting-state fMRI Data

Lee, David S.; Sahib, Ashish; Narr, Katherine; Nunez, Elvis; Joshi, Shantanu

UCLA

Spatio-Temporal Graph Convolution for Resting-State fMRI Analysis

Gadgil, Soham; Zhao, Qingyu; Pfefferbaum, Adolf; Sullivan, Edith V.; Adeli, Ehsan; Pohl, Kilian M.

Stanford University

A shared neural encoding model for the prediction of subject-specific fMRI response

Khosla, Meenakshi; Ngo, Gia H.; Jamison, Keith; Kuceyeski, Amy; Sabuncu, Mert R.

Cornell University

6th Oct : 15:00 UTC
Advances in Machine Learning Theory B

Learning Semantics-enriched Representation via Self-discovery, Self-classification, and Self-restoration

Haghighi, Fatemeh; Hosseinzadeh Taher, Mohammad Reza; Zhou, Zongwei; Gotway, Michael B.; Liang, Jianming

Arizona State University

DECAPS: Detail-oriented Capsule Networks

Mobiny, Aryan; Yuan, Pengyu; Cicalese, Pietro Antonio; Nguyen, Hien Van

University of Houston

Federated Simulation for Medical Imaging

Li, Daiqing; Kar, Amlan; Ravikumar, Nishant; Frangi, Alejandro; Fidler, Sanja

NVIDIA

Continual Learning of New Diseases with Dual Distillation and Ensemble Strategy

Li, Zhuoyun; Zhong, Changhong; Wang, Ruixuan; Zheng, Wei-Shi

Sun Yat-sen University

Learning to Segment When Experts Disagree

Zhang, Le; Tanno, Ryutaro; Bronik, Kevin; Jin, Chen; Nachev, Parashkev; Barkhof, Frederik; Cicarrelli, Olga; Alexander, Daniel C.

University College London

Deep Disentangled Hashing with Momentum Triplets for Neuroimage Search

Yang, Erkun; Yao, Dongren; Cao, Bing; Guan, Hao; Yap, Pew-Thian; Shen, Dinggang; Liu, Mingxia

University of North Carolina at Chapel Hill

Learning joint shape and appearance representations with metamorphic auto-encoders

Bône, Alexandre; Vernhet, Paul; Colliot, Olivier; Durrleman, Stanley

Institut du Cerveau et de la Moelle épinière

6th Oct : 15:30 UTC
Interpretability

Scientific Discovery by Generating Counterfactuals using Image Translation

Narayanaswamy, Arunachalam; Venugopalan, Subhashini; Webster, Dale R.; Peng, Lily; Corrado, Greg S.; Ruamviboonsuk, Paisan; Bavishi, Pinal; Brenner, Michael; Nelson, Philip C.; Varadarajan, Avinash V.

Google

Interpretable Deep Models for Cardiac Resynchronisation Therapy Response Prediction

Puyol-Anton, Esther; Chen, Chen; Clough, James R.; Ruijsink, Bram; Sidhu, Baldeep S.; Gould, Justin; Porter, Bradley; Elliott, Marc; Mehta, Vishal; Rueckert, Daniel; Rinaldi, Christopher A. ; King, Andrew P.

King's College London

Encoding Visual Attributes in Capsules for Explainable Medical Diagnoses

Lalonde, Rodney; Torigian, Drew; Bagci, Ulas

University of Central Florida

Interpretability-guided Content-based Medical Image Retrieval

Silva, Wilson; Poellinger, Alexander ; S. Cardoso, Jaime; Reyes, Mauricio

INESC TEC, Universidade do Porto

Domain aware medical image classifier interpretation by counterfactual impact analysis

Lenis, Dimitrios; Major, David; Wimmer, Maria; Berg, Astrid; Sluiter, Gert; Bühler, Katja

VRVis

Towards Emergent Language Symbolic Semantic Segmentation and Model Interpretability

Santamaria-Pang, Alberto; Kubricht, James; Chowdhury, Aritra; Bhushan, Chitresh; Tu, Peter

General Electric

6th Oct : 16:00 UTC
Uncertainty

Heterogeneity Measurement of Cardiac Tissues Leveraging Uncertainty Information from Image Segmentation

Huang, Ziyi; Gan, Yu; Lye, Theresa; Zhang, Haofeng; Laine, Andrew; Angelini, Elsa D.; Hendon, Christine

Columbia University

Efficient Shapley Explanation For Features Importance Estimation Under Uncertainty

Li, Xiaoxiao; Zhou, Yuan; Dvornek, Nicha C.; Gu, Yufeng; Ventola, Pamela; Duncan, James S.

Princeton University

Cartilage Segmentation in High-Resolution 3D Micro-CT Images via Uncertainty-Guided Self-Training with Very Sparse Annotation

Zheng, Hao; Motch Perrine, Susan M.; Pitirri, M. Kathleen; Kawasaki, Kazuhiko; Wang, Chaoli; Richtsmeier, Joan T.; Chen, Danny Z.

University of Notre Dame

Probabilistic 3D surface reconstruction from sparse MRI information

Tóthová, Katarína; Parisot, Sarah; Lee, Matthew; Puyol-Anton, Esther; King, Andrew P.; Pollefeys, Marc; Konukoglu, Ender

ETH Zurich

Can you trust predictive uncertainty under real dataset shifts in digital pathology?

Thagaard, Jeppe; Hauberg, Soren; van der Vegt, Bert; Ebstrup, Thomas; Hansen, Johan D.; B. Dahl, Anders

Visiopharm A/S

Deep Generative Model for Synthetic-CT Generation with Uncertainty Predictions

Hemsley, Matt; Chugh, Brige; Ruschin, Mark; Lee, Young; Tseng, Chia-Lin; Stanisz, Greg; Lau, Angus

University of Toronto

6th Oct : 15:00 UTC
Segmentation - Oncological B

Asymmetrical Multi-Task Attention U-Net for the Segmentation of Prostate Bed in CT Image

Xu, Xuanang; Lian, Chunfeng; Wang, Shuai; Wang, Andrew; Royce, Trevor; Chen, Ronald; Lian, Jun; Shen, Dinggang

The University of North Carolina at Chapel Hill

Learning High-Resolution and Efficient Non-local Features for Brain Glioma Segmentation in MR Images

Jia, Haozhe; Xia, Yong; Cai, Weidong; Huang, Heng

Northwestern Polytechnical University, Research & Development Institute of Northwestern Polytechnical University in Shenzhen, University of Pittsburgh

Robust Pancreatic Ductal Adenocarcinoma Segmentation with Multi-Institutional Multi-Phase Partially-Annotated CT Scans

Zhang, Ling; Shi, Yu; Yao, Jiawen ; Bian, Yun; Cao, Kai; Jin, Dakai; Xiao, Jing; Lu, Le

PAII Inc.

Generation of Annotated Brain Tumor MRIs with Tumor-induced Tissue Deformations for Training and Assessment of Neural Networks

Uzunova, Hristina; Ehrhardt, Jan; Handels, Heinz

Institut für Medizinische Informatik

E2Net: An Edge Enhanced Network for Accurate Liver and Tumor Segmentation on CT Scans

Tang, Youbao; Tang, Yuxing; Zhu, YingYing; Xiao, Jing; Summers, Ronald M.

National Institutes of Health

Universal loss reweighting to balance lesion size inequality in 3D medical image segmentation

Shirokikh, Boris; Shevtsov, Alexey; Kurmukov, Anvar; Dalechina, Alexandra; Krivov, Egor; Kostjuchenko, Valery; Golanov, Andrey; Belyaev, Mikhail

IITP RAS

Brain tumor segmentation with missing modalities via latent multi-source correlation representation

Zhou, Tongxue; Canu, Stéphane; Vera, Pierre; Ruan, Su

LITIS-Quantif, University of Rouen

6th Oct : 15:30 UTC
Detection, Localization and Segmentation

Deep Volumetric Universal Lesion Detection using Light-Weight Pseudo 3D Convolution and Surface Point Regression

Cai, Jinzheng; Yan, Ke; Cheng, Chi Tung; Xiao, Jing; Liao, ChienHung; Lu, Le; Harrison, Adam P.

PAII Inc.

DeScarGAN: Disease-Specific Anomaly Detection with Weak Supervision

Wolleb, Julia; Sandkuehler, Robin; Cattin, Philippe C.

Universität Basel

KISEG: A Three-Stage Segmentation Framework for Multi-level Acceleration of Chest CT Scans from COVID-19 Patients

Liu, Xiaohong; Wang, Kai; Wang, Ke; Chen, Ting; Zhang, Kang; Wang, Guangyu

UCSD

CircleNet: Anchor-free Glomerulus Detection with Circle Representation

Yang, Haichun; Deng, Ruining; Lu, Yuzhe; Zhu, Zheyu; Chen, Ye; Roland, Joseph T.; Lu, Le; Landman, Bennett A.; Fogo, Agnes B.; Huo, Yuankai

Vanderbilt University

Weakly supervised one-stage vision and language disease detection using large scale pneumonia and pneumothorax studies

Tam, Leo K.; Wang, Xiaosong; Turkbey, Evrim; Lu, Kevin; Wen, Yuhong; Xu, Daguang

NVIDIA Corporation

Diagnostic Assessment of Deep Learning Algorithms for Detection and Segmentation of Lesion in Mammographic images

Boot, Thomas; Irshad, Humayun

BostonMeditech

Deep Attentive Panoptic Model for Prostate Cancer Detection Using Biparametric MRI Scans

Yu, Xin; Lou, Bin; Zhang, Donghao; Winkel, David; Arrahmane, Nacim; Diallo, Mamadou; Meng, Tongbai; von Busch, Heinrich; Grimm, Robert; Kiefer, Berthold; Comaniciu, Dorin; Kamen, Ali; ProstateAI Clinical Collaborators

Siemens Healthineers

6th Oct : 16:00 UTC
Segmentation - General D

CNN-GCN Aggregation Enabled Boundary Regression for Biomedical Image Segmentation

Meng, Yanda; Wei, Meng; Gao, Dongxu; Zhao, Yitian; Yang, Xiaoyun; Huang, Xiaowei; Zheng, Yalin

University of Liverpool

KiU-Net: Towards Accurate Segmentation of Biomedical Images using Over-complete Representations

Valanarasu, Jeya Maria Jose; Sindagi, Vishwanath; Hacihaliloglu, Ilker; Patel, Vishal M.

Johns Hopkins University

LAMP: Large Deep Nets with Automated Model Parallelism for Image Segmentation

Zhu, Wentao; Zhao, Can; Roth, Holger R; Xu, Ziyue; Xu, Daguang

NVIDIA

INSIDE: Steering Spatial Attention with Non-Imaging Information in CNNs

Jacenków, Grzegorz; O'Neil, Alison Q.; Mohr, Brian; Tsaftaris, Sotirios A.

The University of Edinburgh

SiamParseNet: Joint Body Parsing and Label Propagation in Infant Movement Videos

Ni, Haomiao; Xue, Yuan; Zhang, Qian; Huang, Xiaolei

Penn State University

Orchestrating Medical Image Compression and Remote Segmentation Networks

Liu, Zihao; Li, Sicheng; Chen, Yen-kuang ; Liu, Tao; Liu, Qi; Xu, Xiaowei; Shi, Yiyu; Wen, Wujie

Florida International University

6th Oct : 15:00 UTC
Ultrasound Imaging A

Sensorless Freehand 3D Ultrasound Reconstruction via Deep Contextual Learning

Guo, Hengtao; Xu, Sheng; Wood, Bradford; Yan, Pingkun

Rensselaer Polytechnic Institute

Ultra2Speech - A Deep Learning Framework for Formant Frequency Estimation and Tracking from Ultrasound Tongue Images

Saha, Pramit; Liu, Yadong; Gick, Bryan; Fels, Sidney

University of British Columbia

Ultrasound Video Summarization using Deep Reinforcement Learning

Liu, Tianrui; Meng, Qingjie; Vlontzos, Athanasios; Tan, Jeremy; Rueckert, Daniel; Kainz, Bernhard

Imperial College London

Predicting obstructive hydronephrosis based on ultrasound alone

Erdman, Lauren; Skreta, Marta; Rickard, Mandy; McLean, Carson; Mezlini, Aziz; Keefe, Daniel T.; Blais, Anne-Sophie; Brudno, Michael; Lorenzo, Armando; Goldenberg, Anna

Hospital for Sick Children, University of Toronto

Semi-Supervised Training of Optical Flow Convolutional Neural Networks in Ultrasound Elastography

K. Z. Tehrani, Ali; Mirzaei, Morteza; Rivaz, Hassan

Concordia University

Three-dimensional thyroid assessment from untracked 2D ultrasound clips

Wein, Wolfgang; Lupetti, Mattia; Zettinig, Oliver; Jagoda, Simon; Salehi, Mehrdad; Markova, Viktoria; Zonoobi, Dornoosh; Prevost, Raphael

ImFusion GmbH

Complex Cancer Detector: Complex Neural Networks on Non-stationary Time Series for Guiding Systematic Prostate Biopsy

Javadi, Golara; To, Minh Nguyen Nhat; Samadi, Samareh; Bayat, Sharareh; Sojoudi, Samira; Hurtadol, Antonio; Chang, Silvia; Black, Peter; Mousavi, Parvin; Abolmaesumi, Purang

University of British Columbia

6th Oct : 15:30 UTC
Prediction and Diagnosis B

DeepPrognosis: Preoperative Prediction of Pancreatic Cancer Survival and Surgical Margin via Dynamic Contrast-Enhanced CT Imaging

Yao, Jiawen; Shi, Yu; Lu, Le; Xiao, Jing; Zhang, Ling

PAII, INC

Holistic Analysis of Abdominal CT for Predicting the Grade of Dysplasia of Pancreatic Lesions

Dmitriev, Konstantin; Kaufman, Arie E.

Stony Brook University

Feature-enhanced Graph Networks for Genetic Mutational Prediction Using Histopathological Images in Colon cancer

Ding, Kexin; Liu, Qiao; Lee, Edward; Zhou, Mu; Lu, Aidong; Zhang, Shaoting

University of North Carolina at Charlotte

Spatial-And-Context aware (SpACe) "virtual biopsy" radiogenomic maps to target tumor mutational status on structural MRI

Ismail, Marwa; Correa, Ramon; Bera, Kaustav; Verma, Ruchika; Saeed Bamashmos, Anas; Beig, Niha; Antunes, Jacob; Prasanna, Prateek; Statsevych, Volodymyr; Ahluwalia, Manmeet; Tiwari, Pallavi

Case Western Reserve University

CorrSigNet: Learning CORRelated Prostate Cancer SIGnatures from Radiology and Pathology Images for Improved Computer Aided Diagnosis

Bhattacharya, Indrani; Seetharaman, Arun; Shao, Wei; Sood, Rewa; Kunder, Christian A.; Fan, Richard E.; Soerensen, Simon John Christoph; Wang, Jeffrey B.; Ghanouni, Pejman; Teslovich, Nikola C.; Brooks, James D.; Sonn, Geoffrey A.; Rusu, Mirabela

Stanford University

Preoperative prediction of lymph node metastasis from clinical DCE MRI of the primary breast tumor using a 4D CNN

Nguyen, Son; Polat, Dogan; Karbasi, Paniz; Moser, Daniel; Wang, Liqiang; Hulsey, Keith; Cobanoglu, Murat Can; Dogan, Basak; Montillo, Albert

University of Texas Southwestern Medical Center

Learning Differential Diagnosis of Skin Conditions with Co-occurrence Supervision using Graph Convolutional Networks

Wu, Junyan; Jiang, Hao; Ding, Xiaowei; Konda, Anudeep; Han, Jin; Zhang, Yang; Li, Qian

VoxelCloud

7th Oct : 10:30 UTC
Opthalmology A

GREEN: a Graph REsidual rE-ranking Network for Grading Diabetic Retinopathy

Liu, Shaoteng; Gong, Lijun; Ma, Kai; Zheng, Yefeng

Tencent

Combining Fundus Images and Fluorescein Angiography for Artery/Vein Classification Using the Hierarchical Vessel Graph Network

Noh, Kyoung Jin; Park, Sang Jun; Lee, Soochahn

Kookmin University

Adaptive Dictionary Learning Based Multimodal Branch Retinal Vein Occlusion Fusion

Huang, Chen; Xie, Keren; Zhang, Yuhan; Li, Mingchao; Wang, Zhongmin; Chen, Qiang

Nanjing University of Science and Technology

TR-GAN: Topology Ranking GAN with Triplet Loss for Retinal Artery/Vein Classification

Chen, Wenting; Yu, Shuang; Wu, Junde; Ma, Kai; Bian, Cheng; Chu, Chunyan; Shen, Linlin; Zheng, Yefeng

Tencent

DeepGF: Glaucoma Forecast Using Sequential Fundus Images

Li, Liu; Wang, Xiaofei; Xu, Mai; Liu, Hanruo; Chen, Ximeng

BUAA

Single-Shot Retinal Image Enhancement Using Deep Image Prior

Qayyum, Adnan; Sultani, Waqas; Shamshad, Fahad; Qadir, Junaid; Tufail, Rashid

Information Technology University of the Punjab, Lahore, Pakistan

7th Oct : 11:00 UTC
Opthalmology B

Robust Layer Segmentation against Complex Retinal Abnormalities for en face OCTA Generation

Zhang, Yuhan; Huang, Chen; Li, Mingchao; Xie, Sha; Xie, Keren; Ji, Zexuan; Yuan, Songtao; Chen, Qiang

Nanjing University of Science and Technology

Anterior Segment Eye Lesion Segmentation with Advanced Fusion Strategies and Auxiliary Tasks

Wang, Ke; Liu, Xiaohong; Zhang, Kang; Chen, Ting; Wang, Guangyu

Tsinghua University

Cost-Sensitive Regularization for Diabetic Retinopathy Grading from Eye Fundus Images

Galdran, Adrian; Dolz, Jose; Chakor, Hadi; Lombaert, Hervé; Ben Ayed, Ismail

University of Bournemouth

Disentanglement Network for Unpsupervised Speckle Reduction of Optical Coherence Tomography Images

Huang, Yongqiang; Xia, Wenjun; Lu, Zexin; Liu, Yan; Zhou, Jiliu; Fang, Leyuan; Zhang, Yi

Sichuan University

Positive-Aware Lesion Detection Network with Cross-scale Feature Pyramid for OCT Images

Fan, Dongyi; Zhang, Chengfen; Lv, Bin; Wang, Lilong; Wang, Guanzheng; Wang, Min; Lv, Chuanfeng; Xie, Guotong

PingAn Technology (Shenzhen

Retinal Layer Segmentation Reformulated as OCT Language Processing

Tran, Arianne; Weiss, Jakob; Albarqouni, Shadi; Faghi Roohi, Shahrooz; Navab, Nassir

Technical University Munich

7th Oct : 11:30 UTC
Opthalmology C

Reconstruction and Quantification of 3D Iris Surface for Angle-Closure Glaucoma Detection in Anterior Segment OCT

Hao, Jinkui; Fu, Huazhu; Xu, Yanwu; Hu, Yan; Li, Fei; Zhang, Xiulan; Liu, Jiang; Zhao, Yitian

Cixi Institute of Biomedical Engineering, Ningbo Institute of Industrial Technology, Chinese Academy of Sciences

Open-Appositional-Synechial Anterior Chamber Angle Classification in AS-OCT Sequences

Hao, Huaying; Fu, Huazhu; Xu, Yanwu; Yang, Jianlong; Li, Fei; Zhang, Xiulan; Liu, Jiang; Zhao, Yitian

Cixi Institute of Biomedical Engineering, Ningbo Institute of Industrial Technology, Chinese Academy of Sciences

A Macro-Micro Weakly-supervised Framework for AS-OCT Tissue Segmentation

Ning, Munan; Bian, Cheng; Lu, Donghuan; Zhou, Hong-Yu; Yu, Shuang; Yuan, Chenglang; Guo, Yang; Wang, Yaohua; Ma, Kai; Zheng, Yefeng

National University of Defense Technology

Macular Hole and Cystoid Macular Edema Joint Segmentation by Two-Stage Network and Entropy Minimization

Ye, Lei; Zhu, Weifang; Bao, Dengsen; Feng, Shuanglang; Chen, Xinjian

Soochow University

Retinal Nerve Fiber Layer Defect Detection With Position Guidance

Ding, Fei; Yang, Gang; Ding, Dayong; Cheng, Gangwei

Renmin University of China

7th Oct : 10:30 UTC
Brain Development and Atlases C

Species-Shared and -Specific Structural Connections Revealed by Dirty Multi-Task Regression

Zhang, Tuo; He, Zhibin; Jiang, Xi; Guo, Lei; Hu, Xiaoping; Liu, Tianming; Du, Lei

Northwestern Polytechnical University

Unified Brain Network with Functional and Structural Data

Yang, Jing; Zhu, Qi; Zhang, Rui; Huang, Jiashuang; Zhang, Daoqiang

Nanjing University of Aeronautics and Astronautics

Integrating Similarity Awareness and Adaptive Calibration in Graph Convolution Network to Predict Disease

Song, Xuegang; Frangi, Alejandro; Xiao, Xiaohua; Cao, Jiuwen; Wang , Tianfu ; Lei, Baiying

shenzhen university

Infant Cognitive Scores Prediction With Multi-stream Attention-based Temporal Path Signature Features

Zhang, Xin; Cheng, Jiale; Ni, Hao; Li, Chenyang; Xu, Xiangmin; Wu, Zhengwang; Wang, Li; Lin, Weili; Shen, Dinggang; Li, Gang

South China University of Technology

7th Oct : 11:00 UTC
Brain Development and Atlases D

Masked Multi-Task Network for Case-level Intracranial Hemorrhage Classification in Brain CT Volumes

Wang, Dongang; Wang, Chenyu; Masters, Lynette; Barnett, Michael

The University of Sydney

Deep Graph Normalizer: A Geometric Deep Learning Approach for Estimating Connectional Brain Templates

Gurbuz, Mustafa Burak; Rekik, Islem

Istanbul Technical University

Supervised Multi-topology Network Cross-diffusion for Population-Driven Brain Network Atlas Estimation

Mhiri, Islem; Mahjoub, Mohamed Ali; Rekik, Islem

Université de Sousse

Partial Volume Segmentation of Brain MRI Scans of any Resolution and Contrast

Billot, Benjamin; Robinson, Eleanor; Dalca, Adrian V.; Iglesias, Juan Eugenio

UCL

BDB-Net: Boundary-enhanced Dual Branch Network for Whole Brain Segmentation

Zhang, Yu; Liu, Bo; Wang, Yinuo; Gao, Zhengzhou; Bai, Xiangzhi; Zhou, Fugen

Beihang University

7th Oct : 11:30 UTC
Brain Development and Atlases E

Brain Age Estimation From MRI Using a Two-Stage Cascade Network with a Ranking Loss

Liu, Ziyang; Cheng, Jian; Zhu, Haogang; Zhang, Jicong; Liu, Tao

Beihang University

Context-Aware Refinement Network Incorporating Structural Connectivity Prior for Brain Midline Delineation

Wang, Shen; Liang, Kongming; Li, Yiming; Yu, Yizhou; Wang, Yizhou

Deepwise AI Lab

Optimizing Visual Cortex Parameterization with Error-Tolerant Teichmüller Map in Retinotopic Mapping

Tu, Yanshuai; Ta, Duyan; Lu, Zhong-Lin; Wang, Yalin

Arizona State University

Multi-Scale Enhanced Graph Convolutional Network for Early Mild Cognitive Impairment Detection

Yu, Shuangzhi; Wang, Shuqiang; Xiao, Xiaohua; Cao, Jiuwen; Yue, Guanghui; Liu, Dongdong; Wang, Tianfu ; Xu, Yanwu; Lei, Baiying

Shenzhen University

Construction of Spatiotemporal Infant Cortical Surface Functional Templates

Huang, Ying; Wang, Fan; Wu, Zhengwang; Zengsi, Chen; Zhang, Han; Wang, Li; Lin, Weili; Shen, Dinggang; Li, Gang; the UNC/UMN Baby Connectome Project Consortium

Northwestern Polytechnical University

7th Oct : 10:30 UTC
Generative Adversarial Networks A

BR-GAN: Bilateral Residual Generating Adversarial Network for Mammogram Classification

Wang, Chu-ran; Zhang, Fandong; Yu, Yizhou; Wang, Yizhou

Deepwise AI Lab

Cycle Structure and Illumination Constrained GAN for Medical Image Enhancement

Ma, Yuhui; Liu , Yonghuai; Cheng, Jun; Zheng, Yalin; Ghahremani, Morteza; Chen, Honghan; Liu, Jiang; Zhao, Yitian

Ningbo Institute of Materials Technology and Engineering, Chinese Academy of Sciences

Generating Dual-Energy Subtraction Soft-Tissue Images from Chest Radiographs via Bone Edge-Guided GAN

Liu, Yunbi; Liu, Mingxia; Xi, Yuhua; Qin, Genggeng; Shen, Dinggang; Yang, Wei

School of Biomedical Engineering,Southern Medical University

GANDALF: Generative Adversarial Networks with Discriminator-Adaptive Loss Fine-tuning for Alzheimer's Disease Diagnosis from MRI

Shin, Hoo-Chang; Ihsani, Alvin; Xu, Ziyue; Mandava, Swetha; Sreenivas, Sharath Turuvekere; Forster, Christopher; Cha, Jiook; Alzheimer's Disease Neuroimaging Initiative

NVIDIA Corporation

Brain MR to PET Synthesis via Bidirectional Generative Adversarial Network

Hu, Shengye; Shen, Yanyan; Wang, Shuqiang; Lei, Baiying

Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences; University of Chinese Academy of Sciences

AGAN: An Anatomy Corrector Conditional Generative Adversarial Network

Engin, Melih; Lange, Robin; Nemes, Andras; Monajemi, Sadaf; Mohammadzadeh, Milad; Goh, Chin Kong; Tu, Tian Ming; Tan, Benjamin YQ; Paliwal, Prakash; Yeo, Leonard LL; Sharma, Vijay K.

See-Mode Technologies Pte. Ltd.

7th Oct : 11:00 UTC
Attention Models

Collaborative Learning of Cross-channel Clinical Attention for Radiotherapy-related Esophageal Fistula Prediction from CT

Cui, Hui; Xu, Yiyue; Li, Wanlong; Wang, Linlin; Duh, Henry

Department of Computer Science and Information Technology, La Trobe University

Learning Bronchiole-Sensitive Airway Segmentation CNNs by Feature Recalibration and Attention Distillation

Qin, Yulei; Zheng, Hao; Gu, Yun; Huang, Xiaolin; Yang, Jie; Wang, Lihui; Zhu, Yuemin

Shanghai Jiao Tong University

Learning Rich Attention for Pediatric Bone Age Assessment

Liu, Chuanbin; Xie, Hongtao; Yan, Yunyan; Mao, Zhendong; Zhang, Yongdong

University of Science and Technology of China

Weakly Supervised Organ Localization with Attention Maps Regularized by Local Area Reconstruction

Guo, Heng; Xu, Minfeng; Chi, Ying; Zhang, Lei; Hua, Xian-Sheng

Alibaba Group Damo Academy

High-order Attention Networks for Medical Image Segmentation

Ding, Fei; Yang, Gang; Wu, Jun; Ding, Dayong; Xv, Jie; Cheng, Gangwei; Li, Xirong

Renmin University of China

NAS-SCAM: Neural Architecture Search-based Spatial and Channel Joint Attention Module for Nuclei Semantic Segmentation and Classification

Liu, Zuhao; Wang, Huan; Wang, Guotai; Qi, Jin

University of Electronic Science and Technology of China

7th Oct : 11:30 UTC
Active Learning and Reinforcement Learning

Attention, Suggestion and Annotation: A Deep Active Learning Framework for Biomedical Image Segmentation

Li, Haohan; Yin, Zhaozheng

Missouri University of Science and Technology

Scribble2Label: Scribble-Supervised Cell Segmentation via Self-Generating Pseudo-Labels with Consistency

Lee, Hyeonsoo; Jeong, Won-Ki

Ulsan National Institute of Science and Technology

Are fast labeling methods reliable? A case study of computer-aided expert annotations on microscopy slides

Marzahl, Christian; Bertram, Christof A.; Aubreville, Marc; Petrick, Anne; Weiler, Kristina; Gläsel, Agnes C.; Fragoso, Marco; Merz, Sophie; Bartenschlager, Florian; Hoppe, Judith; Langenhagen, Alina; Jasensky, Anne-Katherine; Voigt, Jörn; Klopfleisch, Robert; Maier, Andreas

Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU

Deep Reinforcement Active Learning for Medical Image Classification

Wang, Jingwen; Yan, Yuguang; Zhang, Yubing; Cao, Guiping; Yang, Ming; Ng, Michael K.

CVTE

An Effective Data Refinement Approach for Upper Gastrointestinal Anatomy Recognition

Quan, Li; Li, Yan; Chen, Xiaoyi; Zhang, Ni

NEC Laboratories, China

Synthetic Sample Selection via Reinforcement Learning

Ye, Jiarong; Xue, Yuan; Long, L. Rodney; Antani, Sameer; Xue, Zhiyun; Cheng, Keith C.; Huang, Xiaolei

Penn State University

7th Oct : 10:30 UTC
CAI - Video Image Analysis B

Unsupervised Surgical Instrument Segmentation via Anchor Generation and Semantic Diffusion

Liu, Daochang; Wei, Yuhui; Jiang, Tingting; Wang, Yizhou; Miao, Rulin; Shan, Fei; Li, Ziyu

Peking University, Deepwise AI Lab

Towards Accurate and Interpretable Surgical Skill Assessment: A Video-Based Method Incorporating Recognized Surgical Gestures and Skill Levels

Wang, Tianyu; Wang, Yijie; Li, Mian

Shanghai Jiao Tong University

Learning Motion Flows for Semi-supervised Instrument Segmentation from Robotic Surgical Video

Zhao, Zixu; Jin, Yueming; Gao, Xiaojie; Dou, Qi; Heng, Pheng-Ann

The Chinese University of Hong Kong

Spectral-Spatial Recurrent-Convolutional Networks for In-Vivo Hyperspectral Tumor Type Classification

Bengs, Marcel; Gessert, Nils; Laffers , Wiebke ; Eggert, Dennis; Westermann, Stephan; Mueller, Nina A.; Gerstner, Andreas O. H.; Betz, Christian; Schlaefer, Alexander

Hamburg University of Technology

Synthetic and Real Inputs for Tool Segmentation in Robotic Surgery

Colleoni, Emanuele; Edwards, Philip; Stoyanov, Danail

University College London

Perfusion Quantification from Endoscopic Videos: Learning to Read Tumour Signatures

Zhuk, Sergiy; Epperlein, Jonathan P.; Nair, Rahul; Tirupathi, Seshu; Mac Aonghusa, Pól; O'Shea, Donal F.; Cahill, Ronan

IBM Research

7th Oct : 11:00 UTC
CAI - Video Image Analysis C

Asynchronous in Parallel Detection and Tracking (AIPDT): Real-time Robust Polyp Detection

Zhang, Zijian; Shang, Hong; Zheng, Han; Wang, Xiaoning; Wang, Jiajun; Sun, Zhongqian; Huang, Junzhou; Yao, Jianhua

Tencent

OfGAN: Realistic Rendition of Synthetic Colonoscopy Videos

Xu, Jiabo; Anwar, Saeed; Barnes, Nick; Grimpen, Florian; Salvado, Olivier; Anderson, Stuart; Armin, Mohammad Ali

CSIRO

Two-Stream Deep Feature Modelling for Automated Video Endoscopy Data Analysis

Gammulle, Harshala; Denman, Simon; Sridharan, Sridha; Fookes, Clinton

Queensland University of Technology

Rethinking Anticipation Tasks: Uncertainty-aware Anticipation of Sparse Surgical Instrument Usage for Context-aware Assistance

Rivoir, Dominik; Bodenstedt, Sebastian; Funke, Isabel; von Bechtolsheim, Felix; Distler, Marius; Weitz, Jürgen; Speidel, Stefanie

National Center for Tumor Diseases (NCT

Deep Placental Vessel Segmentation for Fetoscopic Mosaicking

Bano, Sophia; Vasconcelos, Francisco; Shepherd, Luke M.; Vander Poorten, Emmanuel; Vercauteren, Tom; Ourselin, Sébastien; David, Anna L.; Deprest, Jan; Stoyanov, Danail

University College London

Deep Multi-View Stereo for Dense 3D Reconstruction from Monocular Endoscopic Video

Bae, Gwangbin; Budvytis, Ignas; Yeung, Chung-Kwong; Cipolla, Roberto

University of Cambridge

Endo-Sim2Real: Consistency learning-based domain adaptation for instrument segmentation

Sahu, Manish; Strömsdörfer, Ronja; Mukhopadhyay, Anirban; Zachow, Stefan

Zuse Institute Berlin

7th Oct : 11:30 UTC
CAI -Navigation and Visualization

Can a hand-held navigation device reduce cognitive load? A user-centered approach evaluated by 18 surgeons.

Brendle, Caroline; Schütz, Laura; Esteban, Javier; Krieg, Sandro M; Eck, Ulrich; Navab, Nassir

Technical University Munich

Symmetric Dilated Convolution for Surgical Gesture Recognition

Zhang, Jinglu; Nie, Yinyu; Lyu, Yao; Li, Hailing; Chang, Jian; Yang, Xiaosong; Zhang, Jian Jun

Bournemouth University

Deep Selection: A Fully Supervised Camera Selection Network for Surgery Recordings

Hachiuma, Ryo; Shimizu, Tomohiro; Saito, Hideo; Kajita, Hiroki; Takatsume, Yoshihumi

Keio University

Interacting with Medical Volume Data in Projective Augmented Reality

Heinrich, Florian; Bornemann, Kai; Lawonn, Kai; Hansen, Christian

Otto-von-Guericke University Magdeburg

VR Simulation of Novel Hands-free Interaction Concepts for Surgical Robotic Visualization Systems

You, Fang; Khakhar, Rutvik; Picht, Thomas; Dobbelstein, David

Carl Zeiss AG

Spatially-Aware Displays for Computer Assisted Interventions

Winkler, Alexander; Eck, Ulrich; Navab, Nassir

TUM

7th Oct : 10:30 UTC
Image Reconstruction C

Encoding Metal Mask Projection for Metal Artifact Reduction in Computed Tomography

Lyu, Yuanyuan; Lin, Wei-An; Liao, Haofu; Lu, Jingjing; Zhou, S. Kevin

Z2Sky Technologies Inc.

Acceleration of High-resolution 3D MR Fingerprinting via a Graph Convolutional Network

Cheng, Feng; Chen, Yong; Zong, Xiaopeng; Lin, Weili; Yap, Pew-Thian; Shen, Dinggang

University of North Carolina ch

Deep Attentive Wasserstein Generative Adversarial Network for MRI Reconstruction with Recurrent Context-Awareness

Guo, Yifeng; Wang, Chengjia; Zhang, Heye; Yang, Guang

Sun Yat-Sen University

Learning MRI k-Space Subsampling Pattern using Progressive Weight Pruning

Xuan, Kai; Sun, Shanhui; Xue, Zhong; Wang, Qian; Liao, Shu

Shanghai Jiao Tong University

Model-driven Deep Attention Network for Ultra-fast Compressive Sensing MRI Guided by Cross-contrast MR Image

Yang, Yan; Wang, Na; Yang, Heran; Sun, Jian; Xu, Zongben

Xi'an Jiaotong university

Simultaneous Estimation of X-ray Back-Scatter and Forward-Scatter using Multi-Task Learning

Roser, Philipp; Zhong, Xia; Birkhold, Annette; Preuhs, Alexander; Syben, Christopher; Hoppe, Elisabeth; Strobel, Norbert; Kowarschik, Markus; Fahrig, Rebecca; Maier, Andreas

Friedrich-Alexander University Erlangen-Nuremberg

7th Oct : 11:00 UTC
MSK Applications A

Towards Robust Bone Age Assessment: Rethinking Label Noise and Ambiguity

Gong, Ping; Yin, Zihao; Wang, Yizhou; Yu, Yizhou

Deepwise AI Lab

Improve bone age assessment by learning from anatomical local regions

Wang, Dong; Zhang, Kexin; Ding, Jia; Wang, Liwei

Peking University

An Analysis by Synthesis Method that Allows Accurate Spatial Modeling of Thickness of Cortical Bone from Clinical QCT

Reinhold, Stefan; Damm, Timo; Büsse, Sebastian; Gorb, Stanislav; Glüer, Claus-C.; Koch, Reinhard

Kiel Univeristy

Segmentation of Paraspinal Muscles at Varied Lumbar Spinal Levels by Explicit Saliency-Aware Learning

Huang, Jiawei; Shen, Haotian; Chen, Bo; Wang, Yue; Li, Shuo

The First Affiliated Hospital, Zhejiang University School of Medicine

Manifold Ordinal-Mixup for Ordered Classes inTW3-based Bone Age Assessment

Bae, Byeonguk; Lee, Jaewon; Kong, Seo Taek; Sung, Jinkyeong; Jung, Kyu-Hwan

VUNO

Contour-based Bone Axis Detection for X-Ray Guided Surgery on the Knee

Kordon, Florian; Maier, Andreas; Swartman, Benedict; Privalov, Maxim; El Barbari, Jan Siad; Kunze, Holger

Friedrich-Alexander-Universität Erlangen-Nürnberg

7th Oct : 11:30 UTC
MSK Applications B

Automatic Segmentation, Localization, and Identification of Vertebrae in 3D CT Images Using Cascaded Convolutional Neural Networks

Masuzawa, Naoto; Kitamura, Yoshiro; Nakamura, Keigo; Iizuka, Satoshi; Simo-Serra, Edgar

FUJIFILM Corporation

Discriminative dictionary-embedded network for comprehensive vertebrae tumor diagnosis

Zhao, Shen; Bin, Chen; Chang, Heyou; Wu, Xi; Li, Shuo

Sun Yat-Sen University

Multi-vertebrae segmentation from arbitrary spine MR images under global view

Chang, Heyou; Zhao, Shen; Zheng, Hao; Chen, Yang; Li, Shuo

Nanjing XiaoZhuang University

A Convolutional Approach to Vertebrae Identification in Whole Spine MRI

Windsor, Rhydian; Jamaludin, Amir; Kadir, Timor; Zisserman, Andrew

University of Oxford

Keypoints Localization for Joint Vertebra Detection and Fracture Severity Quantification

Pisov, Maxim; Kondratenko, Vladimir; Zakharov, Alexey; Petraikin, Alexey; Gombolevskiy, Victor; Morozov, Sergey; Belyaev, Mikhail

Skoltech

Grading Loss: A Fracture Grade-based Metric Loss for Vertebral Fracture Detection

Husseini, Malek; Sekuboyina, Anjany; Loeffler, Maximilian; Navarro, Fernando; Menze, Bjoern H.; Kirschke, Jan S.

TUM

3D Convolutional Sequence to Sequence Model for Vertebral Compression Fractures Identification in CT

Chettrit, David; Meir, Tomer; Lebel, Hila; Orlovsky, Mila; Gordon, Ronen; Akselrod-Ballin, Ayelet; Bar, Amir

Zebra Medical Vision

7th Oct : 10:30 UTC

Breast Imaging A

Deep Doubly Supervised Transfer Network for Diagnosis of Breast Cancer with Imbalanced Ultrasound Imaging Modalities

Han, Xiangmin; Wang, Jun; Zhou, Weijun; Chang, Cai; Ying, Shihui; Shi, Jun

Shanghai University

2D X-ray mammography and 3D breast MRI registration

Soleimani, Hossein; Michailovich, Oleg

University of Waterloo

A Second-order Subregion Pooling Network for Breast Ultrasound Lesion Segmentation

Zhu, Lei; Chen, Rongzhen; Fu, Huazhu; Xie, Cong; Wang, Liansheng; Wan, Liang; Heng, Pheng-Ann

The Chinese University of Hong Kong

Multi-Scale Gradational-Order Fusion Framework for Breast lesions Classification Using Ultrasound images

Ning, Zhenyuan; Tu, Chao; Xiao, Qing; Luo, Jiaxiu; Zhang, Yu

School of Biomedical Engineering, Southern Medical University

Computer-aided Tumor Diagnosis in Automated Breast Ultrasound using 3D Detection Network

Yu, Junxiong; Chen, Chaoyu; Yang, Xin; Wang, Yi; Yan, Dan; Zhang, Jianxing; Ni, Dong

Shenzhen University

Auto-weighting for Breast Cancer Classification in Multimodal Ultrasound

Wang, Jian; Miao, Juzheng; Yang, Xin; Li, Rui; Zhou, Guangquan; Huang, Yuhao; Lin, Zehui; Xue, Wufeng; Jia, Xiaohong; Zhou, Jianqiao; Huang, Ruobing; Ni, Dong

Shenzhen University

7th Oct : 11:00 UTC

Ultrasound Imaging B

Self-supervised Contrastive Video-Speech Representation Learning for Ultrasound

Jiao, Jianbo; Cai, Yifan; Alsharid, Mohammad; Drukker, Lior; Papageorghiou, Aris T.; Noble, J. Alison

University of Oxford

Directing Ultrasound Probe Placement for Image Guided Prostate Radiotherapy

Grimwood, Alex; McNair, Helen; Hu, Yipeng; Bonmati, Ester; Barratt, Dean; Harris, Emma J.

Institute of Cancer Research

Searching Collaborative Agents for Multi-plane Localization in 3D Ultrasound

Huang, Yuhao; Yang, Xin; Li, Rui; Qian, JiKuan; Huang, Xiaoqiong; Shi, Wenlong; Dou, Haoran; Chen, Chaoyu; Zhang, Yuanji; Luo, Huanjia; Frangi, Alejandro; Xiong, Yi; Ni, Dong

Shenzhen University, China

Contrastive Rendering for Ultrasound Image Segmentation

Li, Haoming; Yang, Xin; Liang, Jiamin; Shi, Wenlong; Chen, Chaoyu; Dou, Haoran; Li, Rui; Gao, Rui; Zhou, Guangquan; Fang, Jinghui; Liang, Xiaowen; Huang, Ruobing; Frangi, Alejandro; Chen, Zhiyi; Ni, Dong

Shenzhen University

An Unsupervised Approach to Ultrasound Elastography with End-to-end Strain Regularisation

Delaunay, Rémi; Hu, Yipeng; Vercauteren, Tom

University College London

Automatic Probe Movement Guidance for Freehand Obstetric Ultrasound

Droste, Richard; Drukker, Lior; Papageorghiou, Aris T.; Noble, J. Alison

University of Oxford

7th Oct : 11:30 UTC
Fetal Imaging

Deep learning automatic fetal structures segmentation in MRI scans with few annotated datasets

Dudovitch, Gal; Link-Sourani, Daphna; Ben Sira, Liat; Miller, Elka; Ben Bashat, Dafna; Joskowicz, Leo

The Hebrew University of Jerusalem

Data-Driven Multi-Contrast Spectral Microstructure Imaging with InSpect

Slator, Paddy J.; Hutter, Jana; Marinescu, Razvan V.; Palombo, Marco; Jackson, Laurence H.; Ho, Alison; Chappell, Lucy C.; Rutherford, Mary; Hajnal, Joseph V. ; Alexander, Daniel C.

UCL

Semi-Supervised Learning for Fetal Brain MRI Quality Assessment with ROI consistency

Xu, Junshen; Lala, Sayeri; Gagoski, Borjan; Abaci Turk, Esra; Grant, P. Ellen; Golland, Polina; Adalsteinsson, Elfar

Massachusetts Institute of Technology

Enhanced detection of fetal pose in 3D MRI by Deep Reinforcement Learning with physical structure priors on anatomy

Zhang, Molin; Xu, Junshen; Abaci Turk, Esra; Grant, P. Ellen; Golland, Polina; Adalsteinsson, Elfar

Massachusetts Institute of Technology

Automatic angle of progress measurement of intrapartum transperineal ultrasound image with deep learning

Zhou, Minghong; Yuan, Chao; Chen, Zhaoshi; Wang, Chuan; Lu, Yaosheng

Jinan University

Joint Image Quality Assessment and Brain Extraction of Fetal MRI using Deep Learning

Liao, Lufan; Zhang, Xin; Zhao, Fenqiang; Zhong, Tao; Pei, Yuchen; Xu, Xiangmin; Wang, Li; Zhang, He; Shen, Dinggang; Li, Gang

Southern Medical University

7th Oct : 15:00 UTC
Breast Imaging B

MommiNet: Mammographic Multi-View Mass Identification Networks

Yang, Zhicheng; Cao, Zhenjie; Zhang, Yanbo; Han, Mei; Xiao, Jing; Huang, Lingyun; Wu, Shibin; Ma, Jie; Chang, Peng

PingAn Tech, US Research Lab

Multi-Site Evaluation of a Study-Level Classifier for Mammography using Deep Learning

Sargent, Dustin; Park, Sun Young; Jog, Amod; Mohamed, Aly; Richmond, David

IBM Watson Health

The case of missed cancers: Applying AI as a radiologist's safety net

Chorev, Michal; Shoshan, Yoel; Spiro, Adam; Naor, Shaked; Hazan, Alon; Barros, Vesna; Weinstein, Iuliana; Herzel, Esma; Shalev, Varda; Guindy, Michal; Rosen-Zvi, Michal

IBM Research

Decoupling Inherent Risk and Early Cancer Signs in Image-based Breast Cancer Risk Models

Liu, Yue; Azizpour, Hossein; Strand, Fredrik; Smith, Kevin

KTH Royal Institute of Technology

Multi-task learning for detection and classification of cancer in screening mammography

Sainz de Cea, Maria V.; Diedrich, Karl; Bakalo, Ran; Ness, Lior; Richmond, David

IBM

7th Oct : 15:30 UTC
MSK Applications C

SIMBA: Specific Identity Markers for Bone Age Assessment

González, Cristina; Escobar, Mariá; Daza, Laura; Torres, Felipe; Triana, Gustavo ; Arbeláez, Pablo

Universidad de los Andes

Doctor Imitator: A Graph-based Bone Age Assessment Framework Using Hand Radiographs

Chen, Jintai; Yu, Bohan; Lei, Biwen; Feng, Ruiwei; Chen, Danny Z.; Wu, Jian

Zhejiang University

Inferring the 3D Standing Spine Posture from 2D Radiographs

Bayat, Amirhossein; Sekuboyina, Anjany; Paetzold, Johannes C.; Payer, Christian; Stern, Darko; Urschler, Martin; Kirschke, Jan S.; Menze, Bjoern H.

Technical University of Munich

Generative Modelling of 3D in-silico Spongiosa with Controllable Micro-Structural Parameters

Iarussi, Emmanuel; Thomsen, Felix; Delrieux, Claudio

CONICET/UTN

GAN-based Realistic Bone Ultrasound Image and Label Synthesis for Improved Segmentation

Alsinan, Ahmed Z.; Rule, Charles; Vives, Michael; Patel, Vishal M.; Hacihaliloglu, Ilker

Rutgers University

Robust Bone Shadow Segmentation from 2D Ultrasound Through Task Decomposition

Wang, Puyang; Vives, Michael; Patel, Vishal M.; Hacihaliloglu, Ilker

Johns Hopkins University

7th Oct : 15:00 UTC
Neuroimaging C

Spatial Component Analysis to Mitigate Multiple Testing in Voxel-Based Analysis

Gerber, Samuel; Niethammer, Marc

Kitware

MAGIC: Multi-scale Heterogeneity Analysis and Clustering for Brain Diseases

Wen, Junhao ; Varol, Erdem; Chand, Ganesh; Sotiras, Aristeidis; Davatzikos, Christos

University of Pennsylvania

PIANO: Perfusion Imaging via Advection-diffusion

Liu, Peirong; Lee, Yueh Z.; Aylward, Stephen R.; Niethammer, Marc

UNC Chapel Hill

Hierarchical Bayesian Regression for Multi-Site Normative Modeling of Neuroimaging Data

Kia, Seyed Mostafa; Huijsdens, Hester; Dinga, Richard; Wolfers, Thomas; Mennes, Maarten; Andreassen, Ole A.; Westlye, Lars T.; Beckmann, Christian F.; Marquand, Andre F.

Donders Institute

Image-level Harmonization of Multi-Site Data using Image-and-Spatial Transformer Networks

Robinson, Robert; Dou, Qi; Coelho de Castro, Daniel; Kamnitsas, Konstantinos; de Groot, Marius; Summers, Ronald M.; Rueckert, Daniel; Glocker, Ben

Imperial College London

A Disentangled Latent Space for Cross-Site MRI Harmonization

Dewey, Blake E.; Zuo, Lianrui; Carass, Aaron; He, Yufan; Liu, Yihao; Mowry, Ellen M.; Newsome, Scott; Oh, Jiwon; Calabresi, Peter A.; Prince, Jerry L.

Johns Hopkins University

Automated Acquisition Planning for Magnetic Resonance Spectroscopy in Brain Cancer

Bolan, Patrick J.; Branzoli, Francesca; Di Stefano, Anna Luisa; Nichelli, Lucia; Valabregue, Romain; Saunders, Sara; Akçakaya, Mehmet; Sanson, Marc; Lehéricy, Stéphane; Marjańska, Małgorzata

University of Minnesota-Twin Cities

7th Oct : 15:30 UTC
DWI and Tractography B

Unsupervised Deep Learning for Susceptibility Distortion Correction in Connectome Imaging

Qiao, Yuchuan; Shi, Yonggang

Laboratory of Neuro Imaging, Keck School of Medicine of USC, USA

Hierarchical geodesic modeling on the diffusion orientation distribution function for longitudinal DW-MRI analysis

Kim, Heejong; Hong, Sungmin; Styner, Martin; Piven, Joseph; Botteron, Kelly; Gerig, Guido

New York University

TRAKO: Efficient Transmission of Tractography Data for Visualization

Haehn, Daniel; Franke, Loraine; Zhang, Fan; Cetin-Karayumak, Suheyla; Pieper, Steve; O'Donnell, Lauren J.; Rathi, Yogesh

University of Massachusetts Boston

Trajectories from Distribution-valued Functional Curves: A Unified Wasserstein Framework

Sharma, Anuja; Gerig, Guido

University of Utah

Characterizing Intra-Soma Diffusion with Spherical Mean Spectrum Imaging

Huynh, Khoi Minh; Wu, Ye; Thung, Kim-Han; Ahmad, Sahar; Taylor IV, Hoyt Patrick; Shen, Dinggang; Yap, Pew-Thian

The University of North Carolina at Chapel Hill

7th Oct : 15:00 UTC
Generative Adversarial Networks B

SteGANomaly: Inhibiting CycleGAN Steganography for Unsupervised Anomaly Detection in Brain MRI

Baur, Christoph; Graf, Robert; Wiestler, Benedikt; Albarqouni, Shadi; Navab, Nassir

Technische Universität München, Germany

Flow-based Deformation Guidance for Unpaired Multi-Contrast MRI Image-to-Image Translation

Bui, Duc Toan; Nguyen, Manh; Le, Ngan; Luu, Khoa

VinAI Research, Vietnam

Interpretation of Disease Evidence for Medical Images Using Adversarial Deformation Fields

Bigolin Lanfredi, Ricardo; Schroeder, Joyce D.; Vachet, Clement; Tasdizen, Tolga

University of Utah

Spatial-Intensity Transform GANs for High Fidelity Medical Image-to-Image Translation

Wang, Clinton J.; Rost, Natalia S.; Golland, Polina

MIT CSAIL

Graded Image Generation Using Stratified CycleGAN

Liu, Jianfei; Li, Joanne; Liu, Tao; Tam, Johnny

National Eye Institute

Prediction of Plantar Shear Stress Distribution by Conditional GAN with Attention Mechanism

Guo, Jinghui; Ersen, Ali; Gao, Yang; Lin, Yu; Khan, Latifur; Yavuz, Metin

The University of Texas at Dallas

7th Oct : 15:30 UTC
Cross-Domain Methods and Reconstruction A

Unified cross-modality feature disentangler for unsupervised multi-domain MRI abdomen organs segmentation

Jiang, Jue; Veeraraghavan, Harini

Memorial Sloan Kettering Cancer Center

Dynamic memory to alleviate catastrophic forgetting in continuous learning settings

Hofmanninger, Johannes; Perkonigg, Matthias; Brink, James A.; Pianykh, Oleg; Herold, Christian; Langs, Georg

Medical University of Vienna

Unlearning Scanner Bias for MRI Harmonisation

Dinsdale, Nicola K.; Jenkinson, Mark ; Namburete, Ana I.L.

University of Oxford

Cross-Domain Image Translation by Shared Latent Gaussian Mixture Model

Zhu, YingYing; Tang, Youbao; Tang, Yuxing; Elton, Daniel C.; Lee, Sungwon; Pickhardt, Perry J.; Summers, Ronald M.

National Institutes of Health

7th Oct : 16:00 UTC
Cross-Domain Methods and Reconstruction B

Self-supervised Skull Reconstruction in Brain CT Images with Decompressive Craniectomy

Matzkin, Franco; Newcombe, Virginia; Stevenson, Susan; Khetani, Aneesh; Newman, Tom; Digby, Richard; Stevens, Andrew; Glocker, Ben; Ferrante, Enzo

CONICET / Universidad Nacional del Litoral

X2Teeth: 3D Teeth Reconstruction from a Single Panoramic Radiograph

Liang, Yuan; Song, Weinan; Yang, Jiawei; Qiu, Liang; Wang, Kun; He, Lei

UCLA

Domain Adaptation for Ultrasound Beamforming

Tierney, Jaime; Luchies, Adam; Khan, Christopher; Byram, Brett; Berger, Matthew

Vanderbilt University

CDF-Net: Cross-Domain Fusion Network for accelerated MRI reconstruction

Nitski, Osvald; Nag, Sayan; McIntosh, Chris; Wang, Bo

University of Toronto

7th Oct : 15:00 UTC
Image Registration C

Are Registration Uncertainty and Error Monotonically Associated?

Luo, Jie; Frisken, Sarah; Wang, Duo; Golby, Alexandra; Sugiyama, Masashi; Wells III, William M.

Harvard Medical School/UTokyo

MR-to-US registration using multiclass segmentation of hepatic vasculature with a reduced 3D U-Net

Thomson, Bart R.; Smit, Jasper N.; Ivashchenko, Oleksandra V.; Kok, Niels F. M.; Kuhlmann, Koert F. D.; Ruers, Theo J. M.; Fusaglia, Matteo

The Netherlands Cancer Institute

Detecting Pancreatic Ductal Adenocarcinoma in Multi-phase CT Scans via Alignment Ensemble

Xia, Yingda; Yu, Qihang; Shen, Wei; Zhou, Yuyin; Fishman, Elliot K.; Yuille, Alan

Johns Hopkins University

Biomechanics-informed Neural Networks for Myocardial Motion Tracking in MRI

Qin, Chen; Wang, Shuo; Chen, Chen; Qiu, Huaqi; Bai, Wenjia; Rueckert, Daniel

Imperial College London

Fluid registration between lung CT and stationary chest tomosynthesis images

Tian, Lin; Puett, Connor; Liu, Peirong; Shen, Zhengyang; Aylward, Stephen R.; Lee, Yueh Z.; Niethammer, Marc

Department of Computer Science University of North Carolina at Chapel Hill

Anatomical Data Augmentation via Fluid-based Image Registration

Shen, Zhengyang; Xu, Zhenlin; Olut, Sahin; Niethammer, Marc

UNC

Generalizing Spatial Transformers to Projective Geometry with Applications to 2D/3D Registration

Gao, Cong; Liu, Xingtong; Gu, Wenhao; Killeen, Benjamin; Armand, Mehran; Taylor, Russell H.; Unberath, Mathias

The Johns Hopkins University

7th Oct : 15:30 UTC
Shape Models and Landmark Detection C

Dynamic multi-object Gaussian process models

Fouefack, Jean-Rassaire; Borotikar, Bhushan; Douglas, Tania S.; Burdin, Valerie; Mutsvangwa, Tinashe E. M.

University of Cape Town

A kernelized multi-level localization method for flexible shape modeling with few training data

Wilms, Matthias; Ehrhardt, Jan; Forkert, Nils D.

University of Calgary

Unsupervised Learning and Statistical Shape Modeling of the Morphometry and Hemodynamics of Coarctation of the Aorta

Thamsen, Bente; Yevtushenko, Pavlo; Gundelwein, Lina; Lamecker, Hans; Kuehne, Titus; Goubergrits, Leonid

Charité

Convolutional Bayesian Models for Anatomical Landmarking on Multi-Dimensional Shapes

Fan, Yonghui; Wang, Yalin

Arizona State University

SAUNet: Shape Attentive U-Net for Interpretable Medical Image Segmentation

Sun, Jesse; Darbehani, Fatemeh; Zaidi, Mark; Wang, Bo

University Health Network

Multi-Task Dynamic Transformer Network for Concurrent Bone Segmentation and Large-Scale Landmark Localization with Dental CBCT

Lian, Chunfeng; Wang, Fan; Deng, Hannah H.; Wang, Li; Xiao, Deqiang; Kuang, Tianshu; Lin, Hung-Ying; Gateno, Jaime; Shen, Steve G.F.; Yap, Pew-Thian; Xia, James J.; Shen, Dinggang

The University of North Carolina at Chapel Hill

Automatic Localization of Landmarks in Craniomaxillofacial CBCT Images using a Local Attention-based Graph Convolution Network

Lang, Yankun; Lian, Chunfeng; Xiao, Deqiang; Deng, Hannah H.; Yuan, Peng; Gateno, Jaime; Shen, Steve G.F.; Alfi, David M.; Yap, Pew-Thian; Xia, James J.; Shen, Dinggang

University of North Carolina at Chapel Hill

7th Oct : 15:00 UTC

Angiography and Vessel Analysis B

Automated Intracranial Artery Labeling using a Graph Neural Network and Hierarchical Refinement

Chen, Li; Hatsukami, Thomas; Hwang, Jenq-Neng; Yuan, Chun

University of Washington

Time matters: Handling spatio-temporal perfusion information for automated TICI scoring

Nielsen, Maximilian; Waldmann, Moritz; Sentker, Thilo; Frölich, Andreas; Fiehler, Jens; Werner, René

University Medical Center Hamburg-Eppendorf

ID-Fit: Intra-saccular Device adjustment for personalized cerebral aneurysm treatment

Muñoz, Romina; Narata, Ana Paula; Larrabide, Ignacio

Instituto PLADEMA

JointVesselNet: Joint Volume-Projection Convolutional Embedding Networks for 3D Cerebrovascular Segmentation

Wang, Yifan; Yan, Guoli; Zhu, Haikuan; Buch, Sagar; Wang, Ying; Haacke, Ewart Mark; Hua, Jing; Zhong, Zichun

Wayne State University

Classification of Retinal Vessels into Artery-Vein in OCT Angiography Guided by Fundus Images

Xie, Jianyang; Liu , Yonghuai; Zheng, Yalin; Su, Pan; Hu, Yan; Yang, Jianlong; Liu, Jiang; Zhao, Yitian

Cixi Institute of Biomedical Engineering, Ningbo Institute of Industrial Technology, Chinese Academy of Sciences

Vascular surface segmentation for intracranial aneurysm isolation and quantification

Bizjak, Žiga; Likar, Boštjan; Pernuš, Franjo; Špiclin, Žiga

University of Ljubljana, Slovenia

7th Oct : 15:30 UTC
Cardiac Imaging and Modelling

Accelerated 4D Respiratory Motion-resolved Cardiac MRI with a Model-based Variational Network

Qi, Haikun; Fuin, Niccolo; Kuestner, Thomas; Botnar, Rene; Prieto, Claudia

King's College London

Motion Pyramid Networks for Accurate and Efficient Cardiac Motion Estimation

Yu, Hanchao; Chen, Xiao; Shi, Humphrey; Chen, Terrence; Huang, Thomas S.; Sun, Shanhui

UIUC

ICA-UNet: ICA Inspired Statistical UNet for Real-time 3D Cardiac Cine MRI Segmentation

Wang, Tianchen; Xu, Xiaowei; Xiong, Jinjun; Jia, Qianjun; Yuan, Haiyun; Huang, Meiping; Zhuang, Jian; Shi, Yiyu

University of Notre Dame

A Bottom-up Approach for Real-time Mitral Valve Annulus Modeling on 3D Echo Images

Zhang, Yue; Amadou, Abdoul-aziz; Voigt, Ingmar; Mihalef, Viorel; Houle, Helene; John, Matthias; Mansi, Tommaso; Liao, Rui

Siemens Healthineers

A Semi-supervised Joint Network for Simultaneous Left Ventricular Motion Tracking and Segmentation in 4D Echocardiography

Ta, Kevinminh; Ahn, Shawn S.; Stendahl, John C.; Sinusas, Albert J.; Duncan, James S.

Yale University

Joint data imputation and mechanistic modelling for simulating heart-brain interactions in incomplete datasets

Banus, Jaume; Sermesant, Maxime; Camara, Oscar; Lorenzi, Marco

INRIA

Learning Geometry-Dependent and Physics-Based Inverse Image Reconstruction

Jiang, Xiajun; Ghimire, Sandesh; Dhamala, Jwala; Li, Zhiyuan; Gyawali, Prashnna Kumar; Wang, Linwei

Rochester Institute of Technology