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Fengming Lin

Ph.D. student

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As a Ph.D. student in CISTIB at School of Computing, University of Leeds, I'm supervised by Prof. Alejandro Frangi, alongside Dr. Yan Xia and Dr. Nishant Ravikumar. My research area is in Computer Vision for Medical Image Analysis. Specifically, fully/semi-supervised segmentation, domain adaptation, domain generalization, physics-informed neural networks, cross-modality learning.

Education

Ph.D. in Computing, *University of Leeds* 2020.10 - Present
M.S. in Electronics and Communication Engineering, *Shandong University* 2017.10 - 2020.7
B.S. in Communication Engineering, *Shandong University* 2013.10 - 2017.7

Publication

***F Lin**, et al. "GS-EMA: Integrating Gradient Surgery Exponential Moving Average with Boundary-Aware Contrastive Learning for Enhanced Domain Generalization in Aneurysm Segmentation."IEEE 21th International Symposium on Biomedical Imaging (ISBI), 2024*
***F Lin**, et al. "Unsupervised Domain Adaptation for Brain Vessel Segmentation through Transwarp Contrastive Learning." IEEE 21th International Symposium on Biomedical Imaging (ISBI), 2024*
***F Lin**, et al. "High-throughput 3DRA segmentation of brain vasculature and aneurysms using deep learning[J]." Computer Methods and Programs in Biomedicine, 2023.*
***F Lin**, et al. "Adaptive Semi-Supervised Segmentation of Brain Vessels with Ambiguous Labels." 2023 MICCAI-DALI workshop.*
***F Lin**, et al. " Path aggregation U-Net model for brain tumor segmentation.", Multimedia Tools and Applications, 2021.*
***F Lin**, et al. "FMNet: feature mining networks for brain tumor segmentation." IEEE 31st International Conference on Tools with Artificial Intelligence (ICTAI), 2019.*

Research Experience

Vessel Tree Segmentation and Modality Agnostic Aneurysm Detection **2020.10 - Present**
Supervisor: Prof. Alejandro F Frangi, Dr. Yan Xia, Dr. Nishant Ravikumar. CISTIB Lab, University of Leeds

- Domain Generalization on Source-Agnostic Cerebral Aneurysm Segmentation
- Unsupervised Domain Adaptation on Modality-Agnostic Cerebral Vessel Segmentation
- Semi-supervised Cerebral Vessel Segmentation with Ambiguous Labels
- Class-Imbalanced Cerebral Vessel and Aneurysm Segmentation
- Deep Learning-based In Silico Hemodynamic Analysis in Cerebral vasculature (Physics-informed neural networks)

Deep Learning based Brain Tumor Segmentation **2017.10 - 2020.7**
Supervisor: Prof.Ju Liu, Prof.Qiang Wu. ICMIP Lab, Shandong University

- Brain Tumor Segmentation with Path Aggregation Model, Feature Mining Model and Hybrid Pyramid Model; Review Summary.
- Patient overall survival prediction.

Challenge Experience

SHINY-ICARUS: Segmentation over tHree dImensional rotational aNgiographY of Internal Carotid ArteRy with aneurysm **Joint 1st**
SMILE-UHURA: Small Vessel Segmentation at MesoscopIc ScaLEfrom Ultra-High ResolUtion 7T Magnetic Resonance Angiograms
BraTS: Brain Tumor Segmentation (BraTS) Challenge, 2017 2018 2019
FLARE: Fast and Low GPU memory Abdominal oRgan sEgmentation in CT Scans, 2021

Honor and Award

Excellent Graduates of Shandong Province, China Top 1%
Excellent M.S. Thesis in Shandong Province, China Top 1%
First place in the Graduate Entrance Examination of the School of EE, Shandong University Top 1%
Excellent B.S. Thesis in Shandong Province, China Top 1%
DAAI Optical Scholarship of Shandong University Top 10%

Activities

Teaching Assistant of Centre for Satellite Data in Environmental Science, University of Leeds 2023
Vice-President of the Student Union, Shandong University 2016
Head of Planning Department, Student Union, Shandong University 2015
Head of Academic Department, Student Union, Shandong University 2014

Skills

Technical proficiencies Python, Matlab for programming and data analysis; Deep learning model development using PyTorch, Keras, Tensorflow; Experience in medical image data analysis; Software: ImageJ, Paraview.
Communication English, Chinese (native speaker).