Zihao CHEN

E-Mail: chenzihao2000@gmail.com | Cell: (+86)130-0896-0036 | Homepage

EDUCATION

Shanghai Jiao Tong University (SJTU) Sep. 2018 - June 2022 (Expected)

B.S. in Biomedical Engineering, Zhiyuan Honors Program, GPA: 91 (2/72)

Courses: Biomedical Signals and System(97), Biomedical Image Processing(97), Advanced Medical Imaging and Intelligent Navigation(99), Artificial Intelligence and Medical Engineering(93), Machine Learning for Biomedical Signal Processing(92), Mechanisms and Control of Medical Robotics(94)

RESEARCH EXPERIENCE

Cerebral Microbleeds (CMBs) Detection and Segmentation July 2021 - Oct. 2021

Research Assistant | Remotely supervised by Prof. Qi Dou

- Proposed a multi-stage framework concentrating on local contextual information for coarse-to-fine detection and segmentation of CMBs
- Adopted a dynamic training strategy for false positives reduction, achieved 0.66 average F1 and 0.66 average Dice score in 5-fold cross-validation

Bones Registration Nov. 2020 - May 2021

Undergraduate Research Assistant | Supervised by Prof. Guoyan Zheng

- Established a statistical deformable model for femur and integrated it into deep-learning-based registration framework, achieved 0.94 Dice score with limited parameters and smoother deformation field
- Built a deep learning based unsupervised joint affine and deformable framework for femur and pelvis registration, achieved 0.96 and 0.92 Dice performance

Pancreatic Tumor Segmentation July 2019 - Mar. 2020

Undergraduate Research Assistant | Supervised by Prof. Xiaohua Qian

- Designed a uniform spiral transformation method embedding 3D contextual information into 2D model and integrated it into a deep-learning-based pancreatic tumor segmentation framework
- Proposed a transformation-weight-corrected module and a reconstruction prior based regularization to improve segmentation performance
- Achieved state-of-art 0.65 Dice performance in 5-fold cross-validation

PUBLICATION

[3] DeepASDM: a Deep Learning Framework for Affine and Deformable Image Registration Incorporating a Statistical Deformation Model.
Xiaoru Gao, Jeroen Van Houtte, **Zihao Chen**, and Guoyan Zheng.
IEEE EMBS International Conference on Biomedical and Health Informatics (BHI), 2021

[2] An End-to-end Unsupervised Affine and Deformable Registration Framework for Multi-structure Medical Image Registration.
Zihao Chen, Xiaoru Gao, and Guoyan Zheng
International Congress and Exhibition of Computer Assisted Radiology and Surgery (CARS), 2021 [Abstract]

[1] Model-driven Deep Learning Method for Pancreatic Cancer Segmentation Based on Spiral-transformation.
Xiahan Chen, **Zihao Chen**, Jun Li, Yu-Dong Zhang, Xiaozhu Lin, and Xiaohua Qian
IEEE Transactions on Medical Imaging (TMI), 2021

MISCELLANEOUS

Honors

- Zhiyuan Honor Scholarship (5%) 2019, 2020
- Second-Class Scholarship (10%) 2019, 2020

Skills

- Programming: Python (Pytorch), Matlab, R, C++
- Professional tools: Git, Docker, Latex

Activities

- Deputy Director of Organization Department of the Students Union Dec. 2018 - Dec. 2019