Jishuai He

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EDUCATION

School of Medicine, Tsinghua University **Beijing, CN**
M.S. in Biomedical Engineering, GPA: 3.82/4.00 (3 / 21) Aug 2018 - Jun 2021

College of Medicine and Biological Information Engineering, Northeastern University **Shenyang, CN**
B.E. in Biomedical Engineering, GPA: 3.85/4.00 (5 / 138) Sep 2015 - Jun 2018

PUBLICATIONS

∗ indicates equal contribution

1. Huang K.∗, Liao J.∗, **He J.**∗, et al. A real-time augmented reality device integrated with artificial intelligence for skin toumor surgery. (Under review). 2022.
2. Yao, C., **He, J.***, et al. Feature pyramid self-attention network for respiratory motion prediction in ultrasound image guided surgery. International Journal of Computer Assisted Radiology and Surgery, 2022
3. **He, J.**, et al. FPSN-FNCC: an accurate and fast motion tracking algorithm in 3D ultrasound for image-guided interventions. Physics in Medicine & Biology, 2021.
4. Huang, Y.∗, **He, J.***, et al. Tracking 3D ultrasound anatomical landmarks via three orthogonal plane based scale discriminative correlation filter network. Medical Physics, 2021
5. **He, J.,** et al. Siamese spatial pyramid matching network with location prior for anatomical landmark tracking in 3-Dimension ultrasound sequence. In Chinese Conference on Pattern Recognition and Computer Vision, 2019.
6. Shen, C., **He, J.**, et al. Discriminative correlation filter network for robust landmark tracking in ultrasound guided intervention. In International Conference on Medical Image Computing and Computer-Assisted Intervention (Oral), 2019

RESEARCH EXPERIENCE (SELECTED)

The Development of the Skin Tumor Surgery Navigation system Jul 2021 – present
Algorithm engineer at Tencent AI lab, led by Dr. Jianhua Yao

- Developed the skin tumor segmentation algorithm based on MLP-based model. Compared to UNet, on clinical image, the above algorithm achieved the improvement of 0.1 in term of Dice.
- Developed the automatic surgery planning algorithms to help surgeons design surgical margins and sampling grids.
- Developed the control software of the navigation system and deployed above algorithms to the software.

Anatomical Objects Tracking and Segmentation in 2D/3D Ultrasound Sequence Oct 2018 - Jun 2021
M.S. student at Tsinghua, advised by Prof. Jian Wu

- Coupled the SPP and the MatchNet and firstly introduced the deep network into 3D Ultrasound (US) landmark tracking.
- Proposed the 3D US landmark tracking algorithm based on Siamese network and normalized cross correlation (SiamNCC) and achieved the most accurate and the most fast tracking performance in the CLUST dataset.
- Introduced the FPN into SiamNCC and further improved the network's tracking speed.

- Introduced scale DCFNet into 3D US landmark tracking based on triplanar transformation.

Anatomical Landmark Motion Prediction based on Time Series Feb 2020 - Jun 2021

M.S. student at Tsinghua, advised by Prof. Jian Wu

- Collected 2D/3D target motion time series data from hospital.
- Utilized TCN and transformer to forecasting the motion of the anatomical targets.

Construction, Feature Extraction and Analysis of Brain Function Network Mar 2017 - Mar 2018

B.E. student at NEU, worked with Prof. Yueyang Teng

- Collected MRI data from ADNI database and used DPABI to preprocess data
- Used the convolutional auto-encoder and SVM to diagnose Alzheimer's disease, based on Functional MRI images.

EMPLOYMENT

AI Lab, Tencent **Shenzhen, CN**

Application Researcher Jul 2021 - Present

SKILLS

Programming: Python, C/C++

Frameworks & Tools: Pytorch, Keras, Tensorflow, MATLAB

SCHOLARSHIPS AND AWARDS

- Comprehensive excellent second class scholarship of Tsinghua University Shenzhen Graduate School, Tsinghua University 2018-2019
- Outstanding student cadres of Northeast University 2018
- Second class scholarship of Northeast University, Northeastern University 2015-2016
- Neusoft scholarship, Northeastern University 2015-2016