Yanping Xue

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EDUCATION

Fudan University, Institute for Brain Science 2020.09 – Present
Neurobiology
Expected Degree: Master GPA: N/A

Zhengzhou University, College of Software 2016.09 – 2020.06
Computer and Science Technology
Final Degree: Bachelor GPA: 3.54/4.0 Final Rank: 22/441(top 5%) CET-6: 503

TECHNICAL SKILLS

Languages MATLAB, Python, C++, R, Shell
Analysis Tools FSL, AFNI, SPM, ITK-SNAP, Pytorch
Field of Study fMRI Data Analysis, Machine Learning, Deep Learning

REVELENT COURSES

Advanced Mathematics, Probability and Mathematical Statistics, Discrete Mathematics, Linux Operating System, Principles of Computer Composition, Principles and Application of Database Systems, Data Structures, Computer Network, Machine Learning, Python Programming, Biological Image Processing and Analysis Techniques, Advanced Neurobiology

RESEARCH EXPERIENCES

Predicting Meningiomas Grade based on Deep Learning ***2021.12- Current***
Fudan University, China
- Utilizing Torchio for image normalization to improve the signal-to-noise ratio of images;
- Torchio and OpenCV used for data augmentation to solve effectively imbalanced data and overfitting of the model;
- Modifiy DataLoader, add L1/L2 regularization, fine-tune ResNet50 based on transfer learning for meningioma classification, and improve accuracy to ~90% in clinical data.

Multimodal fMRI data analysis in seizure-like mouse model ***2021.8-Current***
Fudan University, China
- Establish a pipeline for small animal image processing based on NiBabel;
- Utilize a sliding window method to obtain dynamic response process of signal in optogenetic fMRI (ofMRI), and the time resolution of the fMRI signal is increased from 2s to 0.1s through linearly interpolating;
- Analysis the functional network topology of the epileptic brain based on graph theory algorithm.

fMRI data analysis and statistic in patients with facial synkinesis ***2021.3-2022.6***
Fudan University, China
- Use SPM, FSL and AFNI into image preprocessing framework including head movement; correction, time layer correction, spatial registration, signal detrending, quality control and data cleaning;
- Use General Linear Model (GLM) to analysis BOLD signal difference between patients and control and plot signal representation in standard space;
- Utilize SVM in Searchlight-based Multi-voxel pattern analysis (MVPA) of fMRI to identify patterns in patients differencing from healthy subjects.

Establish a seizure-like mouse model and fMRI imaging in small animal ***2020.12-2022.3***
Fudan University, China
- Learn surgical procedure for virus injection and implantation of optical fiber;
- Learn and conduct behavioral test, perfusion and immunofluorescence experiments;
- Learn fMRI experiment in mouse models.

Automatic classification for cataract ***2020.9-2020.11***

Fudan University, China.

- Learn Deep learning knowledge;
- Achieve automatic classification of cataract using Convolutional Neural Network (CNN) through Tensorflow.

Study of single-cell transcriptome and chromatin accessibility combined analytical methods ***2020.3-2020.7***

Zhengzhou University, China.

- Learn Machine Learning such as PCA, t-SNE, KNN;
- Learn Genomics and Statistical knowledge;
- Classify cells from newborn and adult mouse cerebral cortex omics data through machine learning algorithems.

PUBLICATION

Jiawei Chen, **Yanping Xue,** Leihao Ren**. Deep Learning-Based Predicting Tumor Grades and Subtypes, and Expression of Multiple Pathologic Markers in Meningiomas.** European Radiology(IF:7, co-first authors)

Under Review

Tianze Cui, **Yanping Xue. fMRI data analysis and statistic in patients with facial synkinesis.** Nature Commounications (IF:18, co-first authors)

In Preparation

Yanping Xue. Functional network analysis in piriform cortex kindling-induced seizure model -- A multimodal fMRI study. NeuroImage(IF:6.5, first author)

Working Paper

HONORS & AWARDS

- First-class scholarship for outstanding students at Fudan University 2021.06
- Outstanding Graduates of Henan Province, China 2020.06
- Outstanding Graduate of Zhengzhou University. 2020.06
- Received the first-class scholarship for outstanding students at Zhengzhou University for four consecutive years. 2016-2020