Wen Jin

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Education

Master of Neural Engineering in Biomedical Engineering Sep.2017 - present
Shanghai Jiao Tong University (SJTU)

Bachelor of Engineering in Biomedical Engineering Sep.2013 - Jun.2017
Shanghai Jiao Tong University (SJTU)
Major GPA: 3.70/4.3; Rank: 2/45

Research Experience

Simulated Functional Connectivity from Structural Connectivity by Kuramoto Model. Feb.2018 - present
The Neural Engineering Lab (NEL) of SJTU
Advisor: Prof. Junfeng Sun (Biomedical Engineering Department, SJTU), Prof. Shanbao Tong
- Implemented the Kuramoto model to simulate slow and fast cortical oscillations.
- Considered simulated and empirical connectivity both for brain network controllability and pertubation.

Silencing Model for Directed Functional Connectivity in Multi-session fMRI. Dec.2017 - present
The Neural Engineering Lab (NEL) of SJTU
Advisor: Prof. Junfeng Sun, Prof. Shanbao Tong
- Preprocessed resting-state functional MRI of a multi-session dataset to obtain functional connectivity.
- Implemented a silencing method to silence indirect effects in functional connectivity.
- Enhanced the intraclass correlation coefficient after silencing.
- Repeated the results in simulated functional connectivity by kuramoto model.

Implemented Controllability for Internet Addiction Dataset. Sep.2017 - Nov.2017
The Neural Engineering Lab (NEL) of SJTU
Advisor: Prof. Junfeng Sun, Prof. Shanbao Tong
- Preprocessed Diffusion Tensor Imaging of Internet Addiction group (8-28 years old) and control group to obtain structural connectivity.
- Obtained regional modal and average controllability by implementing the Control Theory.
- Distinguished several brain regions of which controllability are significantly different between those two groups.

Predicted and Validated the Effects of Transcranial Ultrasound Stimulation. Sep.2016 - May.2017
Chun-Tsung Program in 2016
Advisor: Prof. Junfeng Sun
- Repeated the Neuronal Intramembrane Cavitation Excitation (NICE) model in Matlab.
- Implemented the NICE model to predict suppression and excitation effects of different ultrasound parameters.
- Stimulated schizophrenia-modeled mice by suppressed ultrasound parameters.
- Validated the predictions by laser speckle imaging techniques and patch clamp recording potential techniques.

Fabrication of Microfluidic Biochip for Sepsis Diagnosis. Jul.2016 - Aug.2016

SJTU-UIUC Summer Research Exchange

Advisor: Prof. Rashid Bashir (Professor of Bioengineering, University of Illinois at Urbana-Champaign), Dr. Umer Hassan (UIUC)

- Made several microfluidic biochips.
- Applied microfluidic biochips for count CD64 neutrophils from a drop of blood.

Brain Glioma Segmentation Using Convolutional Neural Networks. Aug.2016

5th SJTU-KTH Summer School of Biomedical Engineering

Advisor: Prof. Qian Wang (Biomedical Engineering Department, SJTU), Prof. Örjan Smedby (School of Technology and Health, Royal Institute of Technology in Stockholm), Dr. Chunliang Wang (STH, KTH)

- Implemented a multi-channel (TIC and T2 FLAIR MRI channel) CNN segmenting brain glioma with the Keras library in Python
- Evaluated segmentation performance using various metrics (classification accuracy, Dice score and visual inspection)

Awards

Chun-Tsung Endowment Jul.2017

Shanghai Jiao Tong University (SJTU)

Outstanding graduates of Shanghai Jiao Tong University Jun.2017

Shanghai Jiao Tong University (SJTU)

Academic Excellence Scholarship Class-A (Top 5%) for 2015-2016 Dec.2016

Shanghai Jiao Tong University (SJTU)

LUYUEJIAO Scholarship for study abroad in 2016 Oct.2016

Shanghai Jiao Tong University (SJTU)

THREE GOOD STUDENT for 2014-2015 Oct.2015

Shanghai Jiao Tong University (SJTU)

THREE GOOD STUDENT for 2013-2014 Oct.2014

Shanghai Jiao Tong University (SJTU)

Skills

Courses in Master

Matrix theory. Biomedical Signal Processing. Optimization Estimation Theory and System Identification. Cognitive Visual Neuroscience.

Programming Languages

Matlab, python, C++

Languages

Mandarin (native), English (fluent)