WEN JIN

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Second-year Master Student

Education

Sep.2017 - present
Master of Neural Engineering in Biomedical Engineering (Expected March 2020)
Shanghai Jiao Tong University (SJTU)
Major GPA: 3.87/4.0; Rank: 2/86

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

Research Experience

Feb.2018 - Feb.2019
Extracting Individual Neural Fingerprint Encoded in Functional Connectivity by Silencing Indirect Effects.
The Neural Engineering Lab (NEL), SJTU
Advisor: Prof. Junfeng Sun, Prof. Shanbao Tong
- Edges with indirect effects removed gained good discriminability with short fMRI data.
- Reliable edges dominated the subject discriminability of functional brain networks.

Oct.2017 - Sep.2018
Inferring Vulnerable Nodes and Edges by Assessing Brain Network Resilience.
The Neural Engineering Lab (NEL), SJTU
Advisor: Prof. Junfeng Sun, Prof. Shanbao Tong
- By resilience analysis, the inverted-U relationship between brain network resilience and age were observed in three different lifespan DTI datasets.
- Bi-hemispheric putamens and precuneus were identified to be the most critical anatomical areas for brain network resilience.

Jun.2017 - Sep.2017
Neuromodulation Effects of Low-intensity Transcranial Ultrasound Stimulation.
The Neural Engineering Lab (NEL), SJTU
Advisor: Prof. Junfeng Sun, Prof. Shanbao Tong
- Provided evidence for the antidepressant-like effects of transcranial ultrasound stimulation in rats for the first time.
- Neuromodulation effects of pulsed transcranial ultrasound stimulation were correlated with the initial brain state.

Sep.2016 - May.2017
Predicted and Validated the Effects of Transcranial Ultrasound Stimulation.
Chun-Tsung Program in 2016, SJTU
Advisor: Prof. Junfeng Sun
- Implemented the NICE model to predict suppression and excitation effects of different ultrasound parameters.
- Validated the predictions by laser speckle imaging techniques and patch clamp recording potential techniques.

Aug.2016
Brain Glioma Segmentation Using Convolutional Neural Networks.
5th SJTU-KTH Summer School of Biomedical Engineering, SJTU
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)

Teaching Experience

Feb.2019 - present

Teaching Assistant, Biomedical Signals and Linear System

Department of Biomedical Engineering, SJTU

- Responsible for tutoring and scoring assignments.

Publications

Wen Jin, Hong Zhu, Pin Shu, Shanbao Tong, Junfeng Sun, Extracting individual neural fingerprint encoded in functional connectivity by silencing indirect effects, under review.

Pin Shu, **Wen Jin,** Hong Zhu, Shanbao Tong, Junfeng Sun, Inferring vulnerable nodes and edges by assessing brain network resilience, under review.

Daqu Zhang, Hangdao Li, Junfeng Sun, Weiwei Hu, **Wen Jin**, Shengtian Li, and Shanbao Tong, "Antidepressant-like effect of low-intensity transcranial ultrasound stimulation", IEEE Transactions on Biomedical Engineering, 66(2): 411-420, 2019.

Hangdao Li, Junfeng Sun, Hongyang Lu, **Wen Jin**, Peter A Lewin, Shanbao Tong, Pulsed transcranial ultrasound modulates the cortical response to the functional electrical stimulation: in vivo animal study using optical neurovascular imaging, under review.

Awards

Jul.2017

Chun-Tsung Endowment

Shanghai Jiao Tong University (SJTU)

Jun.2017

Outstanding graduates of Shanghai Jiao Tong University

Shanghai Jiao Tong University (SJTU)

Dec.2016

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

Shanghai Jiao Tong University (SJTU)

Oct.2016

LUYUEJIAO Scholarship for study abroad in 2016

Shanghai Jiao Tong University (SJTU)

Skills

Courses in Master

Cognitive Visual Neuroscience. Brain like Intelligence. Biomedical Signal Processing. Optimization Estimation Theory and System Identification. Computer Vision in Biomedical Engineering. Matrix theory.

Courses in Undergraduate

Biomedical Image Processing. Signals and Linear System. Digital Signal Processing. Digital Electronics Technology. Analog Electronic Technology. Microcomputer Principles. Principles of Automatic Control.

Programming Languages

Matlab, python, C++

Languages

Mandarin (native), English (fluent)