Jingyuan Li

Education

2012–2016 **Bachelor, Biomedical Engineering**, *Huazhong University of Science and Technology*, Wuhan.

Grade Final averaged score: 88.27/100

Ranked in second place in my major

2015–2016 **Interchange**, *Tsinghua University*, Beijing.

Project Semi-supervised learning with ladder network implemented to clarify MNIST dataset

2016–present **Master, Electrical and Computer Engineering**, *Carnegie Mellon University*, Pittsburgh.

GPA 3.78

Courses

Undergraduate *Calculus, Probability theory, Permutation and combination, Physics.*

Performed well in Mathematics, electronics and computer science.

Graduate *Numerical Method, Statistical Learning, Deep Learning, Neural data analysis*

Did a lot programming

Research Experience

Undergraduate

2014–2015 **Biochip image system**.

Designed a imaging system with DSP for biochip based on the characteristic of reagent – absorbing near-infrared light then illuminating green flourescent.

2014–2015 **Wearable breast cancer detection system**.

Developed an imaging system for breast aiming at discovering abnormality of breast as soon as possible, based on the blood oxygen level difference between cancer tissue and normal tissue.

2015–2016 **Semi-supervised learning with Ladder network**.

Use a model with lateral connection between encoder path and decoder path to do image classification. Total loss are constituted by reconstruction loss and classification loss.
Firstly, I applied it to do classify MNIST dataset. Later it was used in lung cancer detection

Graduate

2016–2017 **Subcortical brain shape connectivity network analysis**.

Base on structural magnetic resonance image (sMRI) to construct subcortical shape area correlation connectivity network and to analyze the network with graph theory methods.

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2017–present **EEG visual cortex data analysis**.
Analyze neural data from monkey early visual cortex (plotting receptive field, spike sorting, neural representation) in an experiment on statistical learning.

Skills

Programming Languages: Matlab, Python, Scala

Framework: Theano, Kears, Pytorch

Tools: SPM, Semi-automatic spike sorting

Publications

[1] Jingyuan Li, Yujing Gong, and Xiaoying Tang. Hierarchical subcortical sub-regional shape network analysis in alzheimer's disease. *Neuroscience*, 366:70–83, 2017.

[2] Xiaoying Tang, Na Chen, Siyun Zhang, Jeffery A Jones, Baofeng Zhang, Jingyuan Li, Peng Liu, and Hanjun Liu. Predicting auditory feedback control of speech production from subregional shape of subcortical structures. *Human Brain Mapping*, 2017.

Abstract: Subcortical Surface Brain Network Abnormality in Alzheimer's Disease, 2017th Organization for Human Brain Mapping Conference.

Honors

2013 Got third prize in Huazhong Mathematical Modeling

2013-2015 Gained Learning Excellence Award and Self-improvement Award for many times

2015 Assessed as excellent volunteer when took part in 'Chuang Qing Chun' activity

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