

Zitong Lu

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Educational Background

09/2018- Present | East China Normal University, Shanghai, China (ECNU)

- The Institute of Cognitive Neuroscience, School of Psychology and Cognitive Science
- Program: **Cognitive Neuroscience** (advised by **Yixuan Ku**)
- Degree to be conferred: Master of Science by June 2021

09/2014-06/2018 | Northeastern University, Shenyang, China (NEU)

- Software College
- Major/Degree: **Software Engineering**/Bachelor of Engineering
- Overall GPA: 84.6 /100
- Graduation Thesis: Design and Implementation on Real Time Operation Condition Recognition Software of Electric Smelting Furnace for Magnesite based on Deep Learning

Research Interests

- Working memory, Attention, Visual short-term memory (VSTM), Computational neuroscience, Brain-computer interface (BCI), Machine Learning, Deep Learning, Multi-voxel pattern analysis (MVPA), Representational similarity analysis (RSA)

Programming & Experiment Skills

- Proficient in **Python, C, C++, Matlab, Java**, some **Deep Learning frameworks** like Tensorflow, Pytorch, Caffe, Darknet etc. Familiar with Android, IOS, Oracle, SQL etc.
- Experimental experiences in **EEG, fMRI, Eye tracker and TMS**

Research Experience

04/2019-Present | Alignment of basic visual features between deep convolutional neural network and human visual cortex (by the Institute of Cognitive Neuroscience in ECNU)

- Found correspondences between layers of different structural DCNNs and the hierarchy of human visual areas (fMRI data).

04/2019-Present | NeuroRA: A Python Toolbox for Multimodal Neural Data Representation Analysis (by the Institute of Cognitive Neuroscience in ECNU)

- Designed and realized a Python toolbox (NeuroRA) for multimodal (behavioral, EEG, MEG, fNIRS, ECoG, electrophysiology, fMRI) neural data representation analysis.

03/2019-Present | Specific Binding between different features in Visual Working Memory: An EEG and fMRI study (by the Institute of Cognitive Neuroscience in ECNU)

- Explored different binding modes among different features by memory decoding methods.

- Explored the directed-mechanism when binding one unattended feature to another attended feature as an object.

09/2018-03/2019 | Decoding Different Visual Features of Visual Short-Term Memory: An EEG Study (by the Institute of Cognitive Neuroscience in ECNU)

- Designed and realized a novel memory decoding model based on deep learning to decoding the attended feature(orientation) and unattended feature(position).
- Explored the differences in memory of different features by EEG data decoding.
- Collected the data of three groups of people (healthy controls, MCI patients and schizophrenia patients), compared the differences of neural mechanism in different brain regions and different frequency bands and found some diagnostic indicators when could differentiate three groups.

11/2017-05/2018 | Image Recognition and Object Detection of Fused Magnesium Furnace Based on Deep Learning (by State Key Laboratory of Synthetical Automation for Process Industries in NEU)

- Independently developed a piece of software for real-time working status recognition of fused magnesium furnace based on deep learning (an object detection algorithm based on Darknet, an image classification algorithm based on Caffe and a software based on Qt, C and C++).

10/2017-12/2017 | Participated in the design and realization of memory prediction model based on EEG data (based on Python and Tensorflow) (by the Institute of Cognitive Neuroscience in ECNU)

05/2016-01/2017 | Participated in the development of *Shumo* APP for Android in NEU

- Project of National Undergraduate on Innovation and Entrepreneurship (responsible for the development of video player, information browsing and user exchange platform in the APP).

Internship

05/2017-2017/08 | iSoftStone | Programmer (as Program Leader)

- Developed smart parking management system based on Spring, SpringMVC and MyBatis as group leader of five members.

Honors & Activities

12/2018	Third prize of the 15th "HUAWEI Cup" China Graduate Student Mathematical Contest in Modeling
2016-2018	Received Honorable Mention, Meritorious Winner, Honorable Mention in 2016, 2017 and 2018 Mathematical Contest In Modeling respectively
2014-2018	First-Class Merit Scholarship in 2016 & Second-Class Merit Scholarship in 2015, 2017 and 2018 by NEU
2014-2018	Monitor , Class 1404 of Software Engineering major, selected as model class in 2015-2016 academic year
2014-2017	Excellent Student Leader for three consecutive years by NEU
12/2017	Outstanding Graduate in Liaoning Province, awarded by Department of Education of Liaoning Province
2015-2016	Director , Publicity Department of Mathematical Modeling Association of NEU, selected in "Top 10 Association" of Shenyang City in 2015-2016 academic year
2015-2016	Coach Team Member , Ability Development Center of NEU
11/2016	First Prize of Liaoning Province, China Undergraduate Mathematical Contest in

Modeling

11/2015

First-Class Liu Dajie & Fang Wenyu's Scholarship by NEU

Hobbies

Football, music