Curriculum Vitae

Siyu Lai

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Chinese

https://github.com/Valerieqwq

Objective

An aspiring practitioner with with strong interest in algorithmic problem solving, statistics, computer science and information systems. My experience in different fields make me a quick & adaptive learner with a growing scientific acumen. I am passionate about expanding my horizon by undertaking a Software Engineer **MSc degree**. My vision is to contribute to smart software development to make life better.

Work Experience

Research Assistant @ Language, Speech & Music — Oct 2020 - Now

Supervisor: Prof. Yi Du — *Institute of Psychology of the Chinese Academy of Sciences*

- Performed extensive research on semantic information modulated natural speech perception. Classified paragraphs to units of words (jieba), extracted the semantic index for each unit (Word2Vec & BERT), and calculated the envelope, spectrogram and spectrotemporal modulation for auditory stimuli.
- Researched on neural mechanism underlying repeated music listening using EEG (Undergraduate Thesis) Applied multivariate temporal response function, cerebral acoustic coherence and time-frequency analysis to explore how neural tracking of musical stimuli changes across repetitions of passive listening.
- Presented my result at the 23rd National Academic Conference of Psychology

Teaching Assistant @ Neuromatch Academy — Summer 2021

- Organized a pod of 12 students in a 3-week online computational neuroscience summer school. Worked as learning coaches, led thinking, discussion and engagement during zoom meetings, answered questions and mentored group projects and gained "Best TA" from all pod members

Research Assistant @ Computational Cognitive Neuroscience Lab — March 2020 - Sep 2020

Supervisor: Prof. Randy O'Reily & Prof. Charan Ranganath — *Center for Neuroscience, UC Davis*

- Modified computational model framework to simulate the interaction of hippocampal subfields
- Tested the similarities of activation patterns from different layers between recollection/familiarity conditions

Research Assistant @ Center for Brain and Cognitive Learning Sciences — 2017 –2020

Supervisor: Prof. Gui Xue — *National State Key Laboratory of Cognitive Neuroscience and Learning*

- Analyzed and organized large scale (400+ participants) of EEG data on Remember/Know Paradigm
- Established a pipeline for EEG signal organizing, preprocessing and ERP (Even-Related Potential) analysis.
- Developed an experimental paradigm using EEG to explore the cognitive mechanism of music learning
- Conducted several pilot behavioral studies to explore a suitable sets of parameters of music duration, material, learning structure and implemented a GUI in MATLAB that execute a 2-day training & testing of music learning.

Education

MSc. Neuroscience & Neuroimaging | SDC University — Sep 2021-Present

- Relevant Courses: Introduction to Scientific Computing, Fundamental Biomedical Signal Processing, Machine Learning in Neuroscience, Electrophysiology of Cognition, Magnetic Resonance Imaging (taught in English).

Interactive Student in Computational Neuroscience | Neuromatch Academy — Summer 2020

- Intensive and practical courses on Machine Learning, Dynamical System, Stochastic Processes (in Python).
- Led a group project on using a variant of Hidden Markov Model to segment film-viewing fMRI data and compared the pattern similarities of different segmented events.

BSc. Psychology | Beijing Normal University — 2017-2021

Major GPA: 3.84/4.00, ranking 11/123

- Related courses: Introduction to Programming in C, MATLAB, Advanced Experimental Technology in Python, Calculous, Linear Algebra, Probability Theory and Mathematical Statistics, Psychostatistics, Psychometric, Multifactorial Experimental Design, Advanced Cognitive Neuroscience.

Skills & Courses

Coding: Python (Numpy, Pandas, genism, sklearn), MATLAB (PsychoToolBox, EEGLAB, FieldTrip), R, C, Go, Unix.
Data Science: Machine Learning (regression/SVM/HMM/PCA), Deep Learning (RNN, CNN, BERT)
Online Courses: Machine Learning @Stanford University, Python for Everybody Specialization @UMich
International exams: TOEFL (113/120), GRE (Verbal 152/170, Quantitative 170/170)

Awards

Outstanding Undergraduate Thesis Award (Top 3%)	Beijing Normal University -2021
First Prize of Extracurricular Academic & Scientific Works Competition (Top 5%)	Beijing Normal University -2019
Undergraduate Research Grant (RMB 2k)	Beijing Normal University -2018
First Prize of Outstanding Freshman Scholarship (Top 3%)	Beijing Normal University -2017