Ruiqi Chen

Website: rq-Chen.github.io E-mail: crq@pku.edu.cn

Address: 5 Yiheyuan Road, Peking University, Beijing, China, 100871

EDUCATION

Bachelor of Science | Peking University, Beijing, China 2017.9 - Present

- Major: Intelligence Science and Technology, Department of Machine Intelligence
- Overall GPA: 3.56/4.0 (84.7/100)

RESEARCH EXPERIENCE

IDG/McGovern Institute for Brain Research | Tsinghua University 2019.7 - 2019.8

- **Advisor:** Prof. Bo Hong (PI)
- **EEG Oddball Experiment (Link)**
  - Designed an auditory oddball experiment with Psychtoolbox
  - Performed EEG experiment on Neuracle and Neuroscan platform
  - Conducted event-related potential (ERP) analysis with EEGLAB
    - Filtering, artifact rejection / correction, ERP plot, etc.
    - Read part of *An Introduction to the Event-Related Potential Technique* by *Steven Luck*
- **Pilot Study about EEG Functional-Connectivity-Based Microstates (Link)**
  - Conducted EEG microstate analysis with MATLAB
    - Global-field-power-based analysis with *Microstate EEGlab Toolbox*
    - Functional-connectivity-based analysis with *Statistics and Machine Learning Toolbox*
  - Consolidated a variety of data analysis technique
    - k-means clustering, multidimensional scaling, silhouette evaluation, Dynamic general linear model, unsupervised learning

IDG/McGovern Institute for Brain Research | Peking University 2018.9 - Present

- **Advisor:** Prof. Huan Luo (PI)
- **EEG data analysis practice (Link)** 2019.3
  - Implemented an inverted encoding model based on the EEG data collected in a visual working memory task
  - Reconstructed the tuning curve for the orientation of two Gabor stimuli
  - Practiced Matlab programming, basic EEG data processing, and multivariate pattern analysis
- **Project: The representation of time and order in working memory** 2019.4 – Present
  - Completed a review with over 11,000 Chinese characters about the temporal organization of visual working memory (Link)
  - Currently designing an EEG experiment to explore the function of underlying neural oscillations during the temporal organization process (Link)

ACTIVITIES

Summer Program for Neuroscience and Cognitive Science | Tsinghua University 2019.8

- Learnt about the principles, methodology and frontiers of neuroscience (Details)

RELEVANT COURSES

Probability Theory and Statistics (90/100)

- Basic statistical tools including estimation, hypothesis testing, ANOVA, and regression

Computational Perception and Scene Analysis (86/100)

- Physiological, psychological and computational models for vision and audition, the latter covering neural pathway, pitch encoding, source localization, auditory scene analysis, and speech perception

Experimental Psychology (90/100)

- Including experiment design, psychophysical methods, sensation and perception, language, etc.

Practice of Data Structure and Algorithm (87/100)

- C++ implementation of graph algorithms including network flow, shortest path, interval tree, etc.

SKILLS

- **Programming**: C/C++, Python, MATLAB
- **EEG experiment:** Psychtoolbox programming, EEG recording
- **EEG data analysis**: ERP analysis, spectrotemporal analysis, multivariate pattern analysis, dynamic general linear model, unsupervised clustering
- **English**: GRE 338 (AW 4) , TOEFL 106 (Speaking 24), CET6 618