Xiaojue Zhou

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EDUCATION

FALL 2012 – SPRING 2016 **Bachelor of Science, Psychology and Statistics (Honor)**
University of Wisconsin - Madison.

RESEARCH INTERESTS

I am interested in what is in our mental representation and how we learn and consolidate that representation by modeling connectivity in neuroimaging using machine learning techniques with a ultimate goal to predict representation from brain scan. In other words, I am interested in how we perceive the world, how we store that information through learning, and how we represent that information in our mind when later recall.

RESEARCH EXPERIENCE

Research Specialist May 2016 – Present
Kalin Lab**,** University of Wisconsin – Madison, School of Medicine and Public Health
- Adapt neuroimaging software such as ANTS, FSL, Afni, and DTI-TK to preprocess and analyze non-human primate and human structural data, resting-state fMRI, PET and DTI
- Diagnose and improve anatomy T1 normalization and skull-stripping in different development stage's nonhuman primates
- Investigate correlation between longitudinal changes of non-human primate's behaviors and neuroimaging (resting-state fMRI and PET) to understand anxiety development in brain and contributing factors

Research Assistant January 2015 – August 2016
Knowledge and Concepts Lab**,** University of Wisconsin – Madison
- Employ parallel computing techniques (HTC Condor) to facilitate analysis of fMRI data in MATLAB and Unix environment
- Analysis of cross-modality cognition fMRI data to find object mental representations by using modified LASSO including 3D neuron grouping feature
- Assist in team with efficient communication and delivery of results
- Collect, organize and transform fMRI coordinates from over 125 literatures and perform meta-analysis to find human category representations in brain under different experimental and stimuli modalities

Research Intern June 2015 – Oct 2015
Stanford Cognitive & Systems Neuroscience Lab, Stanford School of Medicine
- Score behavioral tests such as WASI WAIT from children and interpret results
- Literature review DTI studies of dyslexia, dyscalculia, semantic dementia, prosopagnosia and dyspraxia and produce experimental questions about white matter development of language ability, mathematical ability and face perception

- Preprocess 45 subject's DTI data using existing preprocessing pipeline

Research Assistant Sep 2013 – June 2015
Language and Cognitive Neuroscience Lab, University of Wisconsin Madison
- Construct pictures naming experiment using Qualtrics and collect data on Amazon Turk
- Establish experimental procedure in Eprime to see priming effects of Chinese words on semantic level perception
- Administer and collect data from over 60 participants
- Analyze research data by calculating various feature statistics such as entropy to get most reliable and efficient object items to represent Chinese naming agreements

HONORS AND AWARDS

2015 **Trewartha &Mensink Honors Senior**
Awarded for Senior Thesis: Statistical Analysis of Weighted Survey Data

PUBLICATIONS

Kenwood, M., Oler, J., Fox, A., Tromp, D., **Zhou, X.**, Riedel, M., ... & Kalin, N. (2017). 833-Consequences of Altering Prefrontal-Temporal Lobe Connectivity in Young Nonhuman Primates. *Biological Psychiatry*, 81(10), S338. Chicago

Chen, L., **Zhou, X.**, Rogers, T., (in preparation). Category-sensitive activation is modulated by task, modality, and stimuli: A meta-analysis of 124 Imaging studies

PRESENTATIONS

"Statistical Analysis of Weighted Survey Data", Senior Honor Thesis Symposium, University of Wisconsin – Madison, 2016

TECHNICAL/STATISTICAL SKILLS

Neuroimaging processing: ANTS, AFNI, FSL, DTI-TK
Programing: R (4 years), Bash/Cshell (2 years), MATLAB (3 years), Python (3 years), SPSS (2 years)
Prallel computing: HTC Condor (2 years), H2O (similar to Spark)
Documentation: Excel, LaTeX, Markdown, Eprime(2 years), Adobe Photoshop
Language: Chinese, English, Japanese

EXTRACURRICULAR ACTIVITIES

IMPAS 2014 Annual Meeting of the Psychometric Society
2015 DataHackthon: Rise of the Machines
2017 Wisconsin Symposium on Emotion
2017 Beyond the lab: using big data to discover principles of cognition by Psychonomic Society