Meng Du

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EDUCATION

2019 - 2023 **University of California, Los Angeles** Ph.D. in Computational Cognition

2015 **University of Michigan, Ann Arbor** B.S. with Honors

Majors: [1] Computer Science, [2] Biopsychology, Cognition & Neuroscience

SELECTED EXPERIENCE

2020 **Teaching Assistant** Neuromatch Academy

- Taught students the theories and applications of computational methods in neuroscience, including Bayesian statistics, machine learning, deep learning, neuronal modeling, etc.

2016 - 2019 **Research Associate** UCLA

- Led computational neuroscience studies using neuroimaging, eye-tracking and behavioral methods.
- Analyzed social networks, behavioral data, and high-dimensional neuroimaging data with machine learning models (e.g., reinforcement learning, deep neural networks), Bayesian inference, etc.
- Developed open-source Python packages for Bayesian meta-analysis, streamlined data analysis, experimental presentation, and experiment scheduling. Built websites for online experiments.
- Contributed to open-source and open-science projects (e.g., NeuroSynth, FMRIPREP).

Research Assistant

2016 Princeton University

- Built highly interactive websites for online data collection with HTML/CSS/JavaScript and Firebase.

2013 - 2016 University of Michigan

- Developed an asynchronous Python plugin for multiple eye trackers to share and show each other's gaze positions in real time.
- Collected and helped analyze EEG/ERPs data. Collected speech data from aphasic patients.
- Coordinated with researchers in Singapore and US and led a research project on gene and culture.

2015 - 2016 **Freelance Software Developer** - Pigment Incubator - AdHackers, LLC

- Developed a networking website with AngularJS frontend, and managed its communications with the Spring backend in REST API.
- Implemented and tested a hybrid mobile application using AngularJS, Ionic and Cordova.

2015 **Software Engineering Intern** LiveRamp

- Developed cross-team APIs for the Java backend with Apache Thrift framework, and improved the corresponding Ruby-on-Rails frontend with the APIs for better usability and error-checking.
- Investigated the code base and wrote bash and Java Cascading scripts to automatically diagnose errors in workflows that ran on the Hadoop Distributed File System.
- Built a hackathon award-winning chrome extension for easy access to knowledge base.

2015 **Software Engineering Intern** Deque Systems, Inc.

- Assisted with the development and testing of an XCode plugin to help developers create iOS apps with better accessibility for blind people; maintained documentation.

SKILLS

- **Python** ..... 20+ projects
  - Machine Learning (*Scikit-learn*)
  - Deep Learning (*Keras*, *PyTorch*)
  - Data Analysis (*Pandas*, *Numpy*)
  - Data Visualization
  - Web Scraping
  - GUI & Standalone Applications
  - Computer Vision (*OpenCV*)
- **Git** ..... 30+ repositories
  - 1k+ GitHub Contributions
- **C/C++** ..... 30+ projects
- **HTML/CSS/JavaScript** .....10+ websites
  - CSS Frameworks (*Bootstrap*)
  - Frontend Frameworks (*AngularJS*, *Ruby on Rails*)
  - Interactive Suvey & Data Visualization
- **Java** ..... Android App Development
  - *Cascading* Workflows on *Hadoop Distributed File System*
- **Experiment design** (behavioral/neuroimaging)
- **fMRI data analysis**
- **R**
- **Bash scripts**
- **Software Design Patterns**
- **MATLAB**

AWARDS, FELLOWSHIPS & HONORS

2020	Debug 2020 Summit Scholarship
2020	Grace Hopper Celebration Scholarship
2019	NeurIPS Travel Award
2019	Methods in Neuroscience at Dartmouth (MIND) Computational Summer School Fellow
2015	LSA Honors Grants for Research (Univ. of Michigan)
2013 - 2015	University Honors (Univ. of Michigan)
2012, 2013	Dean's List (Univ. of Minnesota)
2012	Study Abroad Foundation Scholarship

PUBLICATIONS

Du, M. & Lieberman, M. D. (in prep). NS+: A new meta-analysis tool to extend the utility of NeuroSynth. [Code & beta software]

Du, M., Basyouni, R., Parkinson, C. (in review). How does the brain navigate knowledge of social relations? Testing for shared neural mechanisms for shifting attention in space and social knowledge. *NeuroImage*. [BioRxiv]

Weaverdyck, M. E.*, **Du, M.***, Li, Y., Chang, L. J., Parkinson, C. (in review). Homophily serves as a social prior: The assumption that "birds of a feather flock together" shapes social decisions and relationship beliefs. *Nature Communications*. * Equal contributions

Parkinson, C., & **Du, M.** (2020). How Does the Brain Infer Hidden Social Structures?. *Trends in Cognitive Sciences*. [PDF]

Lieberman, M. D., Straccia, M. A., Meyer, M. L., **Du, M.** & Tan, K. M. (2019). Social, self, (situational), and affective processes in medial prefrontal cortex (MPFC): Causal, multivariate, and reverse inference evidence. *Neuroscience & Biobehavioral Reviews, 99*, 311-328. [PDF]

SELECTED CONFERENCE PRESENTATIONS

Du, M., Basyouni, R., Parkinson, C. (2021). Comparing functional connectivity while shifting attention in physical space and social knowledge. Poster accepted at the 2021 Meeting of the Social and Affective Neuroscience Society, Santa Barbara, CA.

Du, M. & Lieberman, M. D. (2020). NS+: A new meta-analysis tool to extend the utility of NeuroSynth. Software Demonstration accepted at the 2020 Annual Meeting of the Organization for Human Brain Mapping, Montreal, QC.

Du, M., Basyouni, R., Parkinson, C. (2018). Shared neural architecture for navigating space and social hierarchies. Poster presented at the 2018 Meeting of the Social and Affective Neuroscience Society, Brooklyn, NY.