

Meng Du

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EDUCATION

- 2019 - 2024 **University of California, Los Angeles**
(Expected) Ph.D. Program in Computational Cognition
- 2015 **University of Michigan, Ann Arbor**
B.S. with Honors
Majors: ¹ Computer Science, ² Biopsychology, Cognition & Neuroscience

RESEARCH & TECHNICAL EXPERIENCE

- 2020 **Teaching Assistant** Neuromatch Academy
- Taught students the theories and applications of computational methods in neuroscience, including machine learning, Bayesian statistics, deep learning, neuronal modelling, etc.
- 2016 - 2019 **Research Associate** UCLA Department of Psychology
- Led computational neuroscience studies using neuroimaging, eye-tracking and behavioral methods.
 - Analyzed social networks 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, experimental presentation, streamlined data analysis, and experiment scheduling.
 - Contributed to open-source and open-science projects (e.g., NeuroSynth, FMRIprep).
- 2016 **Research Assistant** Princeton Social Neuroscience Lab (Princeton University)
- Built interactive websites for experiments using HTML/CSS/JavaScript and Firebase, which allowed participants to complete a choice reaction time task and a chart drawing task online.
- 2013 - 2016 **Undergraduate Research Assistant** University of Michigan
- Developed an asynchronous Python plugin for multiple eye trackers to share and show each other's gaze positions in real time.
 - Assisted with EEG/ERPs data collection and analysis.
 - Coordinated with researchers in Singapore and US to lead a research project studying gene and cultural differences within China. Completed an honor thesis based on partial results.
- 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 code base and wrote bash/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.

RESEARCH & TECHNICAL EXPERIENCE (cont.)

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.

Android App Projects

2016 • *Decidable*: Developed this app to help people crowd-source the decisions they cannot make.

2014 • *Evento*: Utilized OCR to automatically parse events from physical flyers to Google calendar events.

2014 **Programmer** MiWorkspace Windows team, Univ. of Michigan IT Services

- Accelerated automatic software deployment with Windows command line and PowerShell scripts.
- Collaborated with the Windows team on testing, trouble-shooting and system administration.

SKILLS

• Python 20+ projects Machine Learning Deep Learning (Keras, PyTorch) Web Scraping GUI & Standalone Applications Data Analysis & Visualization	• HTML/CSS/JavaScript 10+ websites CSS Frameworks (<i>Bootstrap</i>) Frontend Frameworks (<i>AngularJS, Ruby on Rails</i>) Interactive Data Visualization	• R
• C/C++ 30+ projects	• Java Android Apps Cascading Workflows on <i>Hadoop Distributed File Systems</i>	• Bash scripts
		• MATLAB
		• Software Design Patterns
		• Ruby

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? Overlapping but distinct mechanisms for attentional shifts in space and social knowledge. *Nature Neuroscience*. [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. & 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.