# Monica (Yunke) Cai

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University of Michigan
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## EDUCATION

**University of Michigan**                                                                    *Aug 2025 – May 2030 (Expected)*
**Ph.D.** in Psychology (Cognition and Cognitive Neuroscience)
Advisor: Dr. Patricia Reuter-Lorenz

**Emory University**                                                                          *Aug 2021 – May 2025*
**B.S.** in Quantitative Sciences
**B.A.** in Psychology *(Summa Cum Laude)*
Honors Thesis: Examining Retrograde Enhancement Effect of Emotional Arousal on Episodic Memory for Neutral Events
Advisor: Dr. Stephan Hamann

**Oxford College of Emory University**                                                        *Aug 2021 – Dec 2022*
**A.A.** in Liberal Arts & Sciences

## RESEARCH INTERESTS

Cognition and Brain, Quantitative and Computational Models, Working Memory, Episodic Memory, Emotion, Neuroimaging, Psychophysiology, Natural Language Processing.

## CONFERENCES & PRESENTATIONS

**Cai, M.**, & Hamann, S. (2024, May). Effects of Post-Encoding Arousing Stimuli of Different Valences on Physiology and Memory Performance. Poster presented at the Association for Psychological Sciences 2024 Annual Meeting, San Francisco, CA.

**Cai, M.**, & Hamann, S. (2024, March). Effects of Post-Encoding Arousing Stimuli of Different Valences on Physiology and Memory Performance. Poster presented at the Georgia Academy of Science 2024 Annual Meeting, Kennesaw, GA.

## HONORS & AWARDS

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| **Dean's List** | 2022 Spring, 2022 Fall, 2023 Fall, 2024 Spring |
| **Emory Conference Presentation Grants ($750)** | 2024 |
| **Honors Program in Emory Psychology Department** | 2024 |

## RESEARCH EXPERIENCE

**Stanford Psychophysiology Lab (PI: Dr. Sylvia Kreibig)**
*Stanford University, CA*                                                                     Aug 2023 – Present

- Led a project on the temporal dynamics of facial muscle movements to emotional stimuli, managing data collection and analysis for 156 participants using electromyography. Lead role in drafting the manuscript and preparing it for publication.
- Synthesized cutting-edge research and future directions on the autonomic nervous system and emotion, demonstrating expertise in research trends while drafting an encyclopedia article.
- Co-led a meta-analysis on disgust responses, analyzing how different facial muscles react to emotional stimuli, providing novel insights into emotional facial reactivity.

**Hamann Cognitive Neuroscience Lab (PI: Dr. Stephan Hamann)**
*Emory University, GA*                                                                        *May 2023 – May 2025*

- Selected as honors student to lead independent project on the retrograde effects of emotional arousal on item and source memory for preceding neutral events.
- Designed and implemented a robust experimental paradigm using PsychoPy to investigate how post-encoding emotional arousal enhances long-term memory.
- Collected and analyzed physiological data (heart rate, skin conductance, respiration) using Biopac, and performed statistical analyses with R and SPSS.
- Administered an fMRI study, coordinating all aspects of scanning sessions, data preprocessing, and participant management.

**Waldman Lab (PI: Dr. Irwin Waldman)**
*Emory University, GA*                                                        *May 2024 – May 2025*
- Conducted quantitative analysis on genetic and behavioral data from a longitudinal twin study using R, contributing to the development of models for internalizing and externalizing psychopathology.

**Emory Mental Health and Development Program (PI: Dr. Elaine Walker)**
*Emory University, GA*                                                        *May 2023 – Jan 2024*
- Performed data analysis for results of ten-year longitudinal schizophrenia study.
- Assisted in online interview with patients and monitored task performance of the participants.
- Conducted and in responsible for participant recruitment.

**PARK Lab (PI: Dr. Phillip Ackerman)**
*Georgia Institute of Technology, GA*                                         *Sept 2022 – Apr 2023*
- Conduct literature reviews for the meta-analysis study on motor skill retention.
- Responsible for gathering prior literature on motor skill retention and screening the papers according to pre-established inclusion and exclusion criteria.

## PROJECTS

**The Communication Characteristics of Mental Health Problems in Subreddits**
*Approaches to Data Science with Text (Instructor: Dr. Sandeep Soni; Grade: A)*
- Used various Natural Language Processing (NLP) and Machine Learning (ML) approaches for text mining, including textual analysis, sentiment analysis, word embeddings, and classification, to analyze 48,000 Reddit entries from mental-health-related subreddits.
- Performed data cleaning and visualization using various packages in Python (e.g., NLTK, scikit-learn, PyTorch) and R (e.g., ggplot2).
- Presented findings on textual characteristics in paper and poster.

**The Effect of Nicotine Consumption and School Year on Sleep Health Among College Students**
*Lab in Experimental Methods (Instructor: Dr. Elizabeth Kim; Grade: A)*
- Designed procedure and materials for the correlational study of the association between sleep health and nicotine use among college students.
- Collected data from 170 participants and used SPSS and R for data analysis.
- Drafted academic manuscript and presented findings in Undergraduate Research Symposium via poster.

## TEACHING EXPERIENCE

**Peer Mentoring in Statistics Program, Emory University**
*Undergraduate Grader of QTM 210: Probability and Statistics*                 Aug 2024 – Present
- Work with Dr. Kevin Quinn and Dr. Zhiyun Gong on grading the problem sets and midterms assigned to students in advanced quantitative theories and methods course.
- Provide feedback to students and assist in course content and related probability and statistics concepts and R programming skills.

**Writing Center, Emory University**
*Academic Writing Consultant*                                                 Aug 2022 – Dec 2022
- Worked with students and the faculty member of college writing class.

- Attended class meetings and support students by providing feedback on students' writing.
- Documented course content and organize classroom activities.

## SKILLS

**Analytical Techniques:** Regression Analysis, Analysis of Variance, Meta-Analysis, D-Prime Analysis, Correlation Analysis, Natural Language Processing
**Programming:** R, Python, SPSS, SQL, AcqKnowledge, Microsoft
**Hardware:** Biopac MP150 & MP 160, Biopac EDA 100C
**Language:** Chinese (native), English (fluent), Spanish (beginner)