

Courtney A. Jimenez

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PROFILE

Research scientist with 9+ years of experience independently **designing rigorous experiments** and **analyzing large-scale behavioral data** using inferential statistics, machine learning, NLP, and computational modeling in Python/R. Skilled at translating **complex quantitative findings** into actionable insights about **real-world human behavior** for diverse audiences.

TECHNICAL SKILLS

Programming: Python, R, SQL, MATLAB, NumPy, pandas, Git/GitHub, Bash/Unix, Jupyter, Conda, Docker, R Markdown
Machine Learning: scikit-learn, sentence-transformers (SBERT), supervised & unsupervised learning, neural networks
Computational Modeling: Reinforcement learning, maximum-likelihood estimation, parameter recovery, model comparison
Statistics & Quantitative Methods: Linear & logistic mixed-effects models, inferential statistics, nonparametric statistics
Research Methods: Experimental design (within- & between-subjects; longitudinal), Qualtrics, Prolific, MTurk
Scientific Computing: Brain imaging analysis, SciPy, Nilearn, GLM analysis, SLURM/HPC, Singularity, matplotlib, ggplot2

EXPERIENCE

Columbia University — Columbia Social Neuroscience Lab

New York, NY

Ph.D. Candidate, Columbia Psychology Department

Sep. 2023–May 2026

- **Independently designed and led** experimental research investigating how reward, expectations, and prediction errors shape social decision-making, interpersonal connection, and subsequent memory across **200+ participants**.
- **Developed, validated, and fit reinforcement-learning models** to trial-level behavioral data, estimating individual learning rates and decision stochasticity and deriving latent variables including expected value and prediction error.
- **Built a Python NLP pipeline** using sentence-transformers (SBERT) to transform 200+ participants' open-ended recall responses into quantitative semantic-similarity measures of memory for naturalistic social information.
- Applied **linear and logistic mixed-effects models, permutation testing, and mediation analysis** to longitudinal and trial-level behavioral data to identify predictors of social connection, learning, and memory.
- Teaching Assistant, Research Methods: Human Behavior: **supervised 15+ undergraduate research teams** in experimental design, statistical analysis in R, scientific inference, and written/oral communication.

Dartmouth College — Dartmouth Social Neuroscience Lab

Hanover, NH

Ph.D. Student, Psychological and Brain Sciences

Sep. 2019–Aug. 2023

- Developed **reproducible computational pipelines for high-dimensional fMRI data** using Python, Nilearn, SPM, and HPC infrastructure (SLURM), with containerized environments using Singularity and Conda.
- Analyzed **50,000+ voxel/participant datasets** using GLM, ROI, and multivariate pattern analysis (MVPA) to identify neural mechanisms supporting social memory consolidation; findings published in *PNAS* (2024).
- Modeled longitudinal changes in social working memory across **120+ participants** using linear mixed-effects models in R, quantifying individual differences and developmental trajectories in behavioral data.

University of California, Davis — Center for Mind and Brain

Davis, CA

Jr. Specialist, Brain and Social Cognition Lab & Cognitive Electrophysiology and Neuroimaging Lab

May 2017–Aug. 2019

- Developed MATLAB/Linux pipelines for EEG preprocessing and analysis, including event-related potentials, power spectral density, and time-series analyses across **50+ participants**.
- Designed multimodal behavioral/neurophysiological experiments integrating E-Prime, BrainVision, Tobii eye-tracking, and OptiTrack; **trained and supervised 8+ undergraduate researchers**.

Focus Strategies

Sacramento, CA

Analyst

Mar. 2017–Oct. 2018

- Engineered an automated reporting pipeline (VBA) that transformed raw HMIS data into **client-ready visualizations**, **reducing turnaround time by ~95%** (10–20 hrs → < 2 min) to support client-facing system assessments.

EDUCATION

Columbia University | Ph.D. in Psychology; M. Phil in Psychology | 2023–2026

Dartmouth College | M.A. in Psychological and Brain Sciences | 2019–2023

University of California, Davis | B.S. in Neurobiology, Physiology, and Behavior; B.A. in Psychology | 2017