Joshua Satya Cetron, Ph.D. | *Resume*

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Data scientist, applied statistician, research methodologist, cognitive neuroscientist

Education

Ph.D., Psychology, Harvard University, Cambridge, MA, May 2023

- Advisors: Mina Cikara, Ph.D. (primary advisor), Joshua Greene, Ph.D.
- Presidential Scholar, Harvard Graduate School of Arts and Sciences
- National Science Foundation Graduate Research Fellow
- M.A. in Psychology also conferred in March 2021

B.A., Neuroscience, *Summa Cum Laude*, Dartmouth College, Hanover, NH, June 2016

- GPA: 3.92, Phi Beta Kappa, Rufus Choate Scholar (top 5% of class, 2 years)
- High Honors Award, Neuroscience Honors Thesis (advisor: David Kraemer, Ph.D.)
- James O. Freeman Presidential Scholar and Kaminsky Family Fund Award Grantee

Professional Experience

Data Science Specialist, Harvard University Institute for Quantitative Social Science *Cambridge, MA, June 2023 - Present*

- Consultant and expert collaborator advising on the development and implementation of methods and statistical analyses for cutting-edge scientific research at Harvard and MIT
- Special expertise: experimental methods, advanced regression modeling, high-dimensional representational analysis, programming and data visualization in R

Doctoral Researcher, Harvard University *Cambridge, MA, September 2018 - May 2023*

- Built and implemented a research program on the impact of intergroup bias on evidence-based learning and the mental representations of factual and opinion statements
- Developed new methods advancing neuroscience, psychology, philosophy, and statistics

Teaching Fellow in Doctoral Statistics, Harvard University *Cambridge, MA, September 2020 - December 2024*

- Taught advanced statistics courses for Harvard doctoral students in the social sciences alongside Senior Lecturer in Statistics Patrick Mair, Ph.D.
- Material covered: GLMMs, GAMs, path regression models, robust and resistant regression, mixture regression, frequentist and Bayesian inference, cluster analysis, hidden Markov models, longitudinal and time series models, regularization (LASSO, Ridge), model-based recursive partitioning, causal inference.
- Three-time awardee of the Derek Bok Center Certificate of Distinction in Teaching

Skills and Expertise

- **Statistical consulting expertise:** 2 years of professional experience consulting on over 125 unique cases providing short- and long-term support for statistical analysis, methods development, data management, research planning and preregistration, and experimental design
- **Advanced expertise in R** for statistical modeling and data visualization
- **Advanced regression modeling** (frequentist and Bayesian): Linear and generalized linear fixed-effects, mixed-effects, and additive modeling, mixture regression, robust and quantile regression
- **Multivariate cluster analyses:** Hierarchical clustering, density-based clustering, K-means
- **Multivariate analyses to process and characterize high-dimensional data:** representational similarity analysis (RSA), multivariate pattern analysis of neuroimaging data (MVPA), multidimensional

scaling (MDS) and unfolding analysis, principal components analysis (PCA), support vector machine (SVM) classifiers, informational network analysis
- **Other programming expertise:** Python, shell scripting, HPC batch process scripting (slurm and PBS for job scheduling), HTML essentials for web-scraping, git, markdown, notebooks via RMarkdown, Quarto, and jupyter notebook
- **Additional skills:** Fluent in Spanish; lifelong musician (25+ years of multi-instrumental training and performance)

Additional Work Experience

Honors Thesis and Research Advisor, Harvard University *Cambridge, MA, 2019 - 2022*

- Advised and mentored multiple award-winning undergraduate student researchers

Researcher and Lab Manager, Cognitive Neuroscience of Learning Lab, Dartmouth College *Hanover, NH, 2013 - 2018*

- Designed and conducted neuroimaging, behavioral, and classroom-based research to explore the multivariate neural representations of STEM learning
- Developed novel analytical methods to characterize knowledge representations in the brain
- Authored 6 academic publications, 5 of which were published within a 2-year period

Director, Dartmouth Outing Club (DOC) First-Year Trips Program *Hanover, NH, 2015 - 2016*

- Directed the largest College outdoor orientation program in the country: 1000 incoming students participating in 139 five-day, student-led outdoor trips across New Hampshire's White Mountains
- Interviewed and hired a 20-person Directorate including 1 Assistant Director and 19 team leaders
- Selected and managed a student volunteer staff of 350+ (278 trip leaders + 56 support crew members on 6 teams) from an applicant pool of 600+

Laboratory Intern and Research Assistant, Emory University Transplant Centers *Atlanta, GA, 2010 - 2012*

- Assisted with data collection, specimen management, and statistical analysis in the laboratory of Leslie Kean, M.D., Ph.D. studying graft-versus-host disease in bone marrow transplant patients

Program Facilitator, Pearson Seminar on Youth Leadership (PSYL) *Lester B. Pearson United World College of the Pacific, Victoria, B.C., Canada, 2010 & 2011*

- Designed and implemented a month-long summer leadership program on social justice, global citizenship, environmental sustainability, and community-building for 100 high school students from 20+ countries, alongside 16 other facilitators and 8 program coordinators