

Alex Rojas

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United States Citizen

EDUCATION

University of California, San Diego
Ph.D Student

La Jolla, CA
September 2025 – June 2030

Harvard College

Bachelor of Arts (A.B.) in Statistics & Mathematics
o Magna Cum Laude and Highest Honors in Field. 3.941 GPA.

Cambridge, MA
August 2020 – May 2024

Harvard University School of Engineering and Applied Sciences

Master of Science (S.M.) in Applied Mathematics
o Concurrent A.B./S.M. program. 3.793 GPA.

Cambridge, MA
August 2023 – May 2024

RESEARCH EXPERIENCES

University of California, San Diego

Graduate Student Researcher
Co-advised by Professors Yian Ma and Rose Yu

La Jolla, CA
September 2025 – Present

Harvard University

Undergraduate Research Assistant, Data-Centric Machine Learning Group

Investigating performance dynamics of averaging neural network parameters using the induced structure of the loss landscape in two settings: (1) after permutation weight-space alignment (2) after fine-tuning from a foundation model. Worked under Professor David Alvarez-Melis.

- o Area (1) Thesis “Characterizing the Effect of Weight-Averaging on Neural Network Loss Landscapes”
- o Area (2) paper accepted as poster presentation at Foundation Models in the Wild Workshop at ICML 2024

Cambridge, MA
September 2023 – May 2024

Harvard University

Undergraduate Research Assistant (through NIH STEP-UP)

Conducted interpretability research to support reinforcement learning in ICU applications under Professor Finale Doshi-Velez and the Data to Actionable Knowledge Lab.

- o Paper at American Medical Informatics Association Symposium Proceedings 2024

Remote and Cambridge, MA
June 2021 – August 2022

J. Craig Venter Institute

High-School Intern (through NIH STEP-UP)

Developed a deep learning pipeline to predict the geographical provenance of a human microbiome 16s rRNA sample for forensic geolocation.

Rockville, MD
June 2019 – August 2019

PROFESSIONAL EXPERIENCES

Belvedere Trading, LLC

Junior Quant Trader Analyst

Quantitative trader specializing in Futures and ETF options market making of Gold, Silver and Copper.

Chicago, IL
September 2024 – September 2025

Junior Quant Trader Analyst Intern

Supported options trading on grains desk by contributing to daily reports and monitoring positions. Designed trade-processing order book and conducted signal research for hedging strategies.

June 2023 – August 2023

Venzyme Venture Catalyst, LLC

Algorithm Development and Statistics Consultant Intern

Enhanced and validated Bayesian network methods for diagnostic decision support platform as a consultant to SimulConsult Inc.; direct report to Chief Financial and Strategist Officer.

Remote and Cambridge, MA
March 2022 – December 2022

TEACHING EXPERIENCES

Harvard University

Teaching Fellow for COMPSCI 181

Cambridge, MA

December 2022 - May 2023

Led weekly discussion sections, held individual and group office hours, updated course assignments and materials, and graded assignments for COMPSCI 181: Machine Learning, taught by Dr. Weiwei Pan.

PUBLICATIONS

1. E. Brown, S. Raval, **A. Rojas**, J. Yao, S. Parbhoo, L. A. Celi, S. Swaroop, W. Pan, F. Doshi-Velez [“Where do doctors disagree? Characterizing Decision Points for Safe Reinforcement Learning in Choosing Vasopressor Treatment”](#),
American Medical Informatics Association 2024 Annual Symposium Proceedings

WORKSHOP PUBLICATIONS

1. **Alex Rojas** and David Alvarez-Melis, [“Understanding the Role of Functional Diversity in Weight-Ensembling with Ingredient Selection and Multidimensional Scaling”](#),
Workshop on Foundation Models in the Wild ICML 2024.

THESES

1. **Alex Rojas** [“Characterizing the Effect of Weight-Averaging on Neural Network Loss Landscapes”](#),
Harvard University. Department of Statistics & Department of Mathematics Senior Thesis (2024).
Supervised by Professor David Alvarez-Melis

PREPRINTS

1. M. Hedman, **A. Rojas**, A. Arora, D. Ola, [“Developing and comparing machine learning models to detect sleep apnoea using single-lead electrocardiogram \(ECG\) monitoring”](#),
medRxiv 2021

AWARDS AND FUNDING

1. **Magna Cum Laude**, Harvard College (2024); based on GPA
2. **Highest Honors**, Department of Statistics, Harvard University (2024); based on thesis, GPA, coursework
3. **John Harvard Scholar**, Harvard College (2022); based on GPA
4. **NIH/NIDDK STEP-UP** (2019, 2020, 2021); research grant for underrepresented minorities in STEM

SKILLS

1. **Python**; PyTorch, Tensorflow, Pandas, NumPy, SciPy, Scikit
2. **Cluster**: SLURM, PyTorch DDP
3. **Languages**: English, Spanish.

ACTIVITIES AND INTERESTS

1. Harvard Men’s Club Soccer
2. Running and Swimming
3. Guitar