Camila Blank

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Education

Stanford University
BS in Mathematics and Computer Science

- GPA: 3.9/4.0
- **Coursework:** Data Structures and Algorithms, Design and Analysis of Algorithms, Groups and Rings, Finite Fields with Applications in Combinatorics, Proof-Based Probability Theory, Linear Algebra and Multivariable Calculus, Data Narratives

Experience

Machine Learning and Computational Neuroscience Researcher *Stanford, CA*
The Linderman Lab at Stanford University *Jun 2025 - Present*

- Led project developing reinforcement learning algorithm to model intrinsic rewards in complex animal decision-making
- Awarded 2025 SURP-Stats fellowship, mentored by Scott Linderman and Aditi Jha

Problem Writer *Stanford, CA*
Stanford Math Tournament *Sep 2024 – Present*

- Conceptualizing and designing math problems for one of the largest university-run math contests globally
- Specializing in applying concepts from combinatorics and number theory

Neuroscience Researcher *Stanford, CA*
The Gibson Lab at Stanford University School of Medicine *Jan 2025 – Jun 2025*

- Used linear discriminant analysis and a hidden Markov model to analyze electroencephalogram (EEG) sleep recording data
- Project investigated the role of myelination and circadian rhythms in Alzheimer's Disease

Composer Fellow *Los Angeles, CA*
Los Angeles Philharmonic *Oct 2023 - Jun 2024*

- Composed 3 original works performed and recorded by the LA Phil, LA Master Chorale, and other ensembles
- Collaborated with world-renowned composers across several stages of project

Machine Learning Projects

Exploring Dynamic Profiles of User Emotions in LLMs

- Extracted hidden states from Llama-3.1-8B-Instruct and trained linear logistic probes
- Found emotion classification accuracy was >3.5x chance, updated promptly across conversations
- Steered responses using control-probe vectors, confirmed with LLM judge

Reinforcement Learning Models of Animal Curiosity

- Modeled mice learning to navigate 127-node binary tree maze
- Built Q-learning variants to model reward parameterizations and evolving world models in mice
- Custom algorithm using KL-divergence-based reward outperformed vanilla Q-learning in log-likelihood

Skills

Languages: Spanish (Native or bilingual proficiency), Mandarin Chinese (Professional working proficiency)

Technical: Python (Pytorch, Gymnasium, NumPy, Pandas, Matplotlib), C++, R, LaTeX, Wolfram Mathematica, Somnotate, data visualization

Laboratory skills: Immunohistochemistry, electroencephalogram (EEG) sleep analysis