

# Camila Blank

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## Education

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**Stanford University**, *BS in Mathematics and Computer Science*, GPA: 3.9/4.0.

- Courses: Algorithms, Real Analysis, Linear Algebra, Abstract Algebra, Probability, Explainable AI, etc.

## Experience

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### Brain Foundation Model Researcher

*Stanford Artificial Intelligence Laboratory*

*Stanford, CA*

*September 2025-Present*

- Building an explainable, end-to-end foundation model for diffusion MRI
- Interpreting the latent space of the model for scientific discovery
- Mentored by Dr. Ehsan Adeli in STAI/SVL Lab

### ML and Computational Neuroscience Researcher

*The Linderman Lab at Stanford University*

*Stanford, CA*

*Jun 2025 - Present*

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

### Problem Writer

*Stanford Math Tournament*

*Stanford, CA*

*Sep 2024 - Present*

- Writing combinatorics problems for one of the largest university-run math contests globally

### Neuroscience Researcher

*The Gibson Lab at Stanford University School of Medicine*

*Stanford, CA*

*Jan 2025 - Jun 2025*

- Applied machine learning algorithms to analyze EEG sleep recording data
- Project investigated the role of myelination and circadian rhythms in Alzheimer's Disease

### Composer Fellow

*Los Angeles Philharmonic*

*Los Angeles, CA*

*Oct 2023 - Jun 2024*

- Composed 3 original works performed and recorded by the LA Phil, LA Master Chorale, and other ensembles

## Machine Learning Projects

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### Exploring Dynamic Profiles of User Emotions in LLMs

[Blog](#) [🔗](#)

- 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

[Poster](#) [🔗](#)

- 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

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**Languages:** Spanish (Native 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