

# Srujan Yamali

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## Education

### University of California, Berkeley

B.S. in Computer Science

**Relevant Coursework:** Machine Learning, Computer Architecture, Data Structures, Algorithms, Discrete Mathematics & Probability Theory, Signals & Systems, Circuits & Devices, Linear Algebra, Artificial Intelligence, Efficient Algorithms

## Experience

### Mercor

San Francisco, CA

Machine Learning Engineer

Aug 2025 – Present

- Developed and deployed production machine learning models serving **12.4M** daily inferences, reducing end-to-end latency by **37%** and increasing downstream task accuracy by **18%** through targeted feature engineering and model optimization.
- Designed a rigorous model evaluation framework spanning offline validation and live A/B testing, cutting prediction error by **29%**, improving calibration by **0.21** ECE, and preventing **2** high-impact regressions prior to production rollout.

### Visa

Remote

Software Engineer Intern

May 2025 – Aug 2025

- Developed internal LLM-powered enterprise automation tools adopted by Visa's risk and product teams, reducing manual review time by **42%** and accelerating decision turnaround from days to under **2** hours.
- Designed and deployed an AI-generated Statement of Work pipeline that automated scoping for **10,000** annual client implementations, improving drafting accuracy by **31%** and cutting onboarding timelines by **45%**.

### Cornell University

Remote

Machine Learning Engineer Intern

Sept 2023 – May 2024

- Implemented YOLO-based object detection and multi-object tracking pipelines for automated identification of dynamic entities in unstructured video data, achieving **85%+** accuracy across **500** hours of real-world footage.
- Developed deep learning-based computer vision systems to detect, track, and analyze individual and group-level behaviors in large-scale video datasets, enabling reliable spatiotemporal pattern extraction under noisy, uncontrolled conditions.

### Children's Hospital of Philadelphia

Philadelphia, PA

Data Science Intern

Sept 2024 – May 2025

- Built a high-performance **time-series analysis pipeline** for large-scale change point detection using **KernelCPD**, identifying distributional shifts in high-dimensional signals and scaling to **75,000** sequences (**37 TB**) with **ruptures** and **KDTree**.
- Designed a **parallelized analytics framework** using Python multiprocessing to accelerate large-scale sequence analysis, reducing end-to-end runtime through optimized statistical comparisons and clustering-based pruning.

### University of Delaware

Newark, DE

Software Development Intern

June 2023 – August 2023

- Developed a **PyQt6/OpenCV** desktop application to automate analysis of **730 GB** of high-resolution video data, reducing manual annotation effort by **90%** and enabling large-scale processing infeasible with manual workflows.
- Implemented a real-time ROI tracking engine using blob detection and centroid-based motion modeling, achieving **99.7%** tracking accuracy while streaming live signals to a GUI overlay for automated classification and role attribution.

## Projects

### Real-Time Behavioral Detection and Tracking | Python, OpenCV, PyQt6, Pandas

[FlyFlirt](#)

- Developed a production-grade computer vision pipeline to automatically detect and track *Drosophila* behaviors across hundreds of hours of video, reducing manual annotation by **90%**.
- Implemented real-time **OpenCV/NumPy** processing for high-throughput experiments with near-zero latency and automated labeling across thousands of frames.

### Genomic Changepoint Heatmap Engine | Python, Ruptures, Scikit-learn, Matplotlib

[RedCarpet](#)

- Created a high-performance changepoint detection engine using multiprocessing and **KDTree**-based similarity search, accelerating large-scale recombination discovery by orders of magnitude.
- Automated visualization of comparative signals via **Matplotlib** heatmaps for reproducible, large-scale genomic analysis.

## Skills & Interests

**Languages/Frameworks:** Python, JavaScript, C/C++, Rust, Java, SQL, HTML/CSS, Node.js

**Libraries/Tools:** React, AWS (S3, EC2, RDS), GCP, Azure, Git, Linux, Flask, Django, Docker, MySQL, PostgreSQL, SQLAlchemy, Kubernetes, REST API, Tailwind CSS, NumPy, Pandas, LangChain, PineconeDB

**AI/ML:** PyTorch, TensorFlow, OpenCV, Scikit-Learn, HuggingFace