

Joshua Lin

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UC San Diego

2025 – 2027

B.S. in Data Science, B.S in Mathematics and Computer Science; Minor in Cognitive Science

GPA: 4.0/4.0

Mt. San Antonio College

2024 – 2025

Associate of Science, Mathematics; Associate of Arts, Psychology; Activities: CS Club, Honors

GPA: 3.9/4.0

RELEVANT COURSEWORK

Real Analysis · Stochastic Processes · AI/ML · Linear Algebra · Differential Eq. · Obj. Oriented Prog. · Database Sys./Arch.
Differential Eq. · Data Struct. & Algs. · Stats. & Prob. · Optimization · M.V. Calculus · Discrete Math · Computational Bio.

PROFESSIONAL EXPERIENCE

AI Research Fellow

June 2025 – Present

Algoverse

Remote

- Designed; implementing a **novel concept-based decoding algorithm** for LLMs to improve semantic alignment, coherence, interpretability, and cross-layer representational consistency, leveraging encoder-decoder architectures.
- Built token-level decoding pipelines in Python w/**PyTorch** & **Hugging Face Transformers/API**, clustering word embeddings w/**PCA**, **Agglomerative Clustering**, efficiently sampling semantic concepts & manifold topologies.
- Developed & benchmarked retrieval-augmented modules, variational autoencoders (**VAEs**), contrastive pretraining strategies, and hybrid attention mechanisms to improve performance and generalization on specialized datasets.
- Co-authored and submitted a research paper to top-tier NLP conferences (**NeurIPS/ACL/EMNLP**). [\[Repo\]](#)

Full-Stack Software Engineer & Web Development Consultant

Feb. 2025 – Present

Self-Employed

Los Angeles, CA

- Designed & deployed a **modern, animated** landing page for Cassandra Edu Inc using **Vite** & **React**. [\[Link\]](#)
- Built domain-authenticated **email** servers, integrated **Notion CMS**, and secure form routing to deliver inquiries.
- Developed a visual **showcase** for technical projects and research featuring interactive **Three.js** renders. [\[Link\]](#)

Math & Statistics Tutor

Dec. 2024 – June 2025

Mt. SAC Mathematics & Computer Science Department

Walnut, CA

- Tutored students in Calculus I–III and Statistics, improving exam & HW performance, conceptual understanding.

PROJECTS

nntimer (Computer Vision Speedcube Timer) | *PyTorch, ROCm, OpenCV, ONNX, MediaPipe* Aug. 2025

- Developed a real-time, hands-free speedcube timer powered by a multi-stage **computer vision** inference pipeline that reliably starts/stops from robust geometric **hand tracking** and cube (solved/unsolved) state **classification**.
- Designed a **finite state machine** to robustly distinguish states by mathematically combining geometric analysis of **hand landmarks (proximity, velocity)** and CNN outputs to precisely manage the timer from *ready* to *solved*.
- Built a custom two-stage deep learning pipeline on a self-labeled dataset, using **YOLOv8** for localization and a **ResNet18 CNN** for state recognition, displaying full-cycle **data collection, training, & deployment**. [\[Repo\]](#)

ClarifAI (NVIDIA AI Agent Hackathon) | *LangChain, Google Cloud API, Manim, FFmpeg, FastAPI* July 2025

- Led development for a **full-stack** web application that uses **agentic AI** to deconstruct research papers in to key concepts, providing users with an **assistant**, executable code implementations, and animated explanatory videos.
- Engineered an agentic **self-correcting LangChain pipeline** capable of writing, executing, debugging, & stitching **Manim** code across multiple iterations for reliable **video production**, achieving fully **autonomous workflows**.
- Enabled real-time logging w/**WebSockets** to stream from the FastAPI backend to the Next.js frontend. [\[Repo\]](#)

pomosync (Universal Pomodoro Timer) | *Rust, React/Next.js, Three.js, ratatui, crossterm* Jan. 2025 – Present

- Built a **cross-platform** Pomodoro system integrating a performant **Rust**-based TUI client (ratatui, crossterm) with a **React/Next.js** frontend, enabling minimalist workflows & dynamic, interactive **Three.js** visualizations.
- Packaged and distributed as a **Cargo binary** and self-hosted web app, with Dockerized deployment, giving users the choice between lightweight local productivity & **design-forward** platforms accessible across devices. [\[Repo\]](#)

Self-Hosted Home Lab | *TrueNAS Scale, Docker, n8n, Nginx, Syncthing, Cloudflare, PostgreSQL* 2023 – Present

- Maintained robust **TrueNAS**-powered servers providing high-availability **storage** and **Docker**-based services (data pipelines, development environments, productivity tools) secured w/**Nginx** reverse proxy & **Cloudflare** Tunnels.
- Implemented **PostgreSQL** databases for centralized data logging and proactive monitoring, integrated **Syncthing** with **Tailscale** for remote access, & self-hosted projects including portfolio website [\[qtxx.dev\]](#) & **n8n** workflows.

TECHNICAL SKILLS

Languages: Python (NumPy, Pandas, Matplotlib), Rust, C/C++, Java, TypeScript, JavaScript, SQL, HTML/CSS, R
AI / ML: PyTorch, TensorFlow, Scikit-Learn, Hugging Face, LangChain, Runpod, OpenCV, MediaPipe, ONNX, NLTK
Web Dev: FastAPI, Flask, Node.js, React, Next.js, Three.js, Tailwind CSS, MongoDB, Nginx, Docker, Google Cloud
Dev Tools: Git, ROCm/CUDA, Neovim, tmux, n8n, uv/pip/venv, Ruff, Cargo, Linux, AUR, Shell (Bash/Zsh), FFmpeg