Joshua Lin

9450 Gilman Dr, #60177, La Jolla, CA 92093

U.S. Citizen | (909)-670-6238 | jjl077@ucsd.edu | [GitHub ↗] | [LinkedIn ↗]

[Portfolio ↗]

EDUCATION

UC San Diego 2025 – 2027
B.S. in Data Science, B.S in Mathematics and Computer Science; Minor in Cognitive Science *GPA: 3.9/4.0*

Mt. San Antonio College 2024 – 2025
Associate of Science, Mathematics; Associate of Arts, Psychology *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 (**AAAI/ICLR/EACL/ACL**). [View ↗]

Full–Stack Software Engineer Feb. 2025 – Present
Freelance *Los Angeles, CA*
- Designed & deployed a **modern**, **animated** landing page for Cassandra Edu Inc using **Vite** & **React**. [View ↗]
- Developing an **e-commerce** platform for @mixplusmatcha with **Next.js** & **Stripe API** for postings and orders.

Mathematics Tutor Dec. 2024 – June 2025
Mt. SAC Mathematics & Computer Science Department *Walnut, CA*
- Tutored students in Calculus I–III & Statistics, improving exam + HW performance & conceptual understanding.

PROJECTS

crakd.co (B.E.L.L.E. AI Hackathon Finalist) | *GraphQL, Async, PCA, Ensemble ML, FastAPI, MCP* Sep. 2025
- Placed Top 10 out of 70+ teams competing against 15+ year experienced developers at B.E.L.L.E. AI Hackathon.
- Engineered ensemble ML pipeline using GitHub **GraphQL** feature extraction w/PCA clustering and quantitative **scoring algorithms**, integrated **agentic LLM workflows** for qualitative assessment and ranking logic. [View ↗]

nntimer (Computer Vision Speedcube Timer) | *PyTorch, ROCm, OpenCV, ONNX, MediaPipe* Aug. 2025
- Developed real-time, hands-free speedcube timer w/multi-stage **computer vision** pipeline for 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**. [View ↗]

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 **video production**, achieving full **autonomous workflows**. [View ↗]

pomosync (Universal Pomodoro Timer) | *Rust, React/Next.js, Three.js, ratatui, crossterm* Jan. 2025 – Present
- Built cross-platform Pomodoro system integrating performant Rust-based TUI client with React/Next.js frontend.
- Packaged as a **Cargo binary** with installation scripts and a developed concurrent **Three.js** web version. [View ↗]

Self-Hosted Home Lab | *TrueNAS Scale, Docker, n8n, Nginx, Syncthing, Cloudflare, PostgreSQL* 2023 – Present
- Maintained TrueNAS-powered servers w/**Docker** containerization, **Nginx** reverse proxy, & **Cloudflare** Tunnels.
- Implemented **PostgreSQL** databases for centralized data logging and proactive monitoring, integrated **Syncthing** with **Tailscale** for remote access, and self-hosted projects including portfolio website & **n8n** workflows. [View ↗]

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, MCP, n8n, uv/pip/venv, Ruff, Cargo, Linux, AUR, Shell (Bash/Zsh), FFmpeg