Joshua Lin

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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.

PROJECTS

pulse (BigRedHacks 2025 Winner) | *Multimodal AI, Web3, Stripe, OAuth, MongoDB, WebSockets* — Sep. 2025
- **Won People's Choice** at Cornell's largest hackathon (400+ participants), competing against 50+ teams with an audiovisual app that revamps hummed melodies into music with synced **WebGL**, **Three.js**, and **GLSL** visuals.
- Reduced user-perceived latency by **70%** through **parallel processing** architecture and **WebSockets**, engineering API integration for MIDI and MusicGen audio seeding to decrease wait time from **15+ seconds** to **>5 seconds.**
- Implemented intelligent **steering agent** with **NLP** to convert prompts into precise control **parameters.** [View](#)

crakd (B.E.L.L.E. AI Hackathon Finalist) | *GraphQL, Async, PCA, Ensemble ML, FastAPI, MCP* — Sep. 2025
- Placed **Top 10** of 70+ teams competing against 640+ hackers at B.E.L.L.E. AI Hackathon with a search engine.
- Engineered **ensemble ML crawling** pipeline with GitHub **GraphQL** feature extraction, **PCA** clustering and quantitative scoring algorithms, integrated **asynchronous** workflows for qualitative **LLM** ranking logic. [View](#)

nntimer (Computer Vision Speedcube Timer) | *PyTorch, ROCm, OpenCV, ONNX, MediaPipe* — Aug. 2025
- Developed a hands-free speedcube timer with 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 Demoer) | *LangChain, Google Cloud API, Manim, FFmpeg* — July 2025
- Engineered a **self-correcting LangChain pipeline** capable of writing, executing, debugging, and 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 timer integrating a Rust-based Cargo binary client with Next.js frontend. [View](#)

Self-Hosted Home Lab | *TrueNAS Scale, Docker, n8n, Nginx, Syncthing, Cloudflare, PostgreSQL* — 2023 – Present
- Maintained TrueNAS server with **Docker/Kubernetes** containerization, **Nginx** reverse proxy, and **Cloudflare**.
- Implemented **PostgreSQL** databases for data logging and monitoring with **Grafana**, integrated **Syncthing** with **Tailscale** for SSH access, **DNS** filtering, and self-hosted projects and **n8n** workflows with **99% uptime**. [View](#)

PROFESSIONAL EXPERIENCE

AI Research Fellow — June 2025 – Present
Algoverse — *Remote*
- Merit scholarship recipient. Co-authored and submitted a research paper to NLP conferences (ICLR/EACL/ACL).
- Designed and implemented a novel **concept-based** decoding algorithm for LLMs to improve semantic alignment, coherence, **interpretability**, and representational consistency, leveraging encoder–decoder architectures. [View](#)

Full–Stack Software Engineer — Feb. 2025 – Present
Freelance — *Los Angeles, CA*
- Deployed a modern, **animated** landing page for Cassandra Edu Inc increasing user engagement by **40%**. [View](#)
- Developing an **e-commerce** platform for @mixplusmatcha with **Next.js** and **Stripe API** for postings/orders.
- Developing a website redesign for UC Berkeley's Undergraduate Women in Economics organization using **React**.

Mathematics Tutor — Dec. 2024 – June 2025
Mt. SAC Mathematics & Computer Science Department — *Walnut, CA*
- Tutored 20+ students with a **5/5** rating in Calculus and Statistics, improving average exam scores by **20** points.

TECHNICAL SKILLS

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