Kevin Davidson

kevin@kevindavidson.work | LinkedIn | GitHub | Website | Hugging Face

EDUCATION

Santa Monica College | Santa Monica, CA | ***Candidate for A.S.-T in Mathematics*** *(Transferring Fall 2026)* **Jun. 2026**
GPA: 3.83/4.0 | Honors Program Member

TECHNICAL SKILLS

Languages: C++17 (Data Structures), Python (AI/ML), JavaScript (React), Bash
Developer Tools: YOLOv8 (Computer Vision), Hailo-8L NPU, Linux (Debian/Ubuntu), Raspberry Pi, PyTorch
Software and Frameworks: React.js, Git/GitHub Actions, VS Code, SSH, Vercel
Web & Design: Figma, Framer, Adobe Creative Suite (Illustrator, Photoshop), CAD

PROFESSIONAL EXPERIENCE

Santa Monica College | Santa Monica, CA **Sep. 2025 - Dec. 2025**
Supplemental Instruction Leader

- **Led peer-to-peer instruction for a 100+ student Data Structures (C++) course**, focusing on complex memory management, pointers, and OOP paradigms.
- **Debugged 50+ student C++ programs weekly** using VS Code, resolving critical logic errors, memory leaks, and segmentation faults.
- **Modernized the student development lifecycle** by guiding students through CI/CD workflows using **GitHub Actions** to identify and fix errors before final submission.
- **Optimized course curriculum** by analyzing student performance data to identify instructional gaps, leading to a restructuring of core topics.

RESEARCH & PROJECTS

TALOS : Open-Source Bicycle Safety System | ***Python, C++, YOLOv8, Raspberry Pi 5, NPU***

- **Achieved a 26x inference speedup (3 to 80+ FPS)** by porting the computer vision loop from CPU to a **Hailo-8L NPU**, enabling real-time, low-latency blind-spot monitoring on embedded hardware.
- **Increased detection reliability for minority classes (motorcycles) by 41%** by engineering a custom YOLOv8 dataset with class oversampling and publishing versioned models to Hugging Face for community use.
- **Engineered a threat-isolation algorithm** based on **Tau Theory (Time-to-Collision)** to filter background noise and calculate time-to-collision, **reducing false-positive alerts on stationary vehicles** for high-speed transit safety.

Full-Stack Campus Resource Engine | ***React.js, Python, Vercel***

- **Streamlined campus navigation and study-room discovery** for students by architecting a live-deployed, "Google Maps-style" React application that serves real-time occupancy data via apollo.kevindavidson.work.
- **Automated the processing of unstructured institutional schedules** by engineering a Python ETL pipeline that sanitizes legacy Oracle APEX data into optimized JSON for 250+ records, yet ensuring sub-second client-side rendering.
- **Maximized resource utility** through a **"Time Machine" predictive simulation**, allowing users to forecast room availability and book study spaces during peak hours to improve building efficiency

LEADERSHIP EXPERIENCE

Future in Tech at SMC | Santa Monica, CA **Aug. 2025 - Present**
Co-Founder and Vice President

- **Scaled a technical student community to 80+ active members** by co-founding the organization and executing a multi-channel recruitment strategy.
- **Facilitated professional development for 20+ students per session** by curating industry-led workshops that converted academic coursework into applied technical strategies for industry interviews and portfolios.

Obscura Design | Los Angeles, CA **Oct. 2020 - Present**
Founder and Lead Graphic Designer

- **Founded and scaled a creative design agency**, maintaining a high-retention model across **30+** B2B accounts by streamlining project timelines and delivering recurring high-impact brand assets.