Kevin Davidson

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EDUCATION

Santa Monica College | Santa Monica, CA *(CS and Math Transfer Applicant)* **Jun. 2026**
AS-T in Mathematics | GPA: 3.83/4.0 | Honors Program

TECHNICAL SKILLS

Languages: C++, Python, C, Java, Javascript, Bash
Developer Tools: Git, Linux (Debian/Ubuntu), VS Code, SSH, Vercel
AI & Computer Vision: YOLOv8, PyTorch, NumPy, OpenCV, Hailo-8L (Edge AI), Hugging Face
Web & Design: React.js, CSS, Figma, Framer, Adobe Photoshop/Illustrator, CAD, HTML

PROFESSIONAL EXPERIENCE

Santa Monica College | Santa Monica, CA **Sep. 2025 - Dec. 2025**
Supplemental Instruction Leader
- Selected by faculty to lead technical review sessions for **100+ students in C++ Data Structures** and bridge the gap between complex lectures and practical implementation.
- **Debugged 50+ student programs weekly**, diagnosing memory leaks, pointer errors, and segfaults in complex paradigms (OOP, Linked Lists, Recursion).
- Analyzed student performance data to identify curriculum gaps, advising the professor on topic restructuring which reduced average assignment error rates.

RESEARCH & PROJECTS

TALOS : Open-Source Bicycle Safety System | *Python, C++, YOLOv8, Raspberry Pi*
- **End-to-End Engineering:** Architected a real-time blind-spot monitoring system integrating custom computer vision models with a 4-part CAD-designed hardware mount.
- **Model Optimization:** Engineered a custom YOLOv8 dataset with class oversampling, boosting motorcycle recall by **41%**; published reproducible models to Hugging Face.
- **Edge Deployment:** Ported inference from CPU to **Hailo-8L NPU**, optimizing the inference loop to increase framerate by **26x (3 FPS to 80+ FPS)** for real-time latency.
- **Physics Implementation:** Programmed a Time-to-Collision (TTC) algorithm using Tau Theory (optical expansion) to filter background noise and isolate collision threats.

Apollo: Real-Time Campus Map | *React.js, Python, Interactive SVGs, Vercel*
- **Full-Stack Architecture:** Architected a responsive "Google Maps-style" web application using **React.js** to visualize real-time occupancy (Classes, SI Sessions, Study Rooms) for the SMC Math & Science building.
- **Data Engineering:** Engineered a **Python** scraping pipeline to harvest schedule data from Oracle APEX, transforming unstructured institutional data into optimized JSON for low-latency client-side rendering.
- **Interactive Simulation:** Implemented a "Time Machine" feature allowing users to simulate future room availability and integrated regex-based sanitization to resolve legacy data rendering artifacts on mobile.

LEADERSHIP EXPERIENCE

Future in Tech at SMC | Santa Monica, CA **Aug. 2025 - Present**
Co-Founder and Vice President
- Launched new student club; executed a recruitment strategy that scaled membership to 80+ active users on Discord and averaged 20+ attendees per meeting.
- Curated and hosted workshops with industry speakers, maintaining an average attendance of 20+ students per session.

Obscura Design | Los Angeles, CA **Oct. 2020 - Present**
Founder and Lead Graphic Designer
- Established a freelance design business, managing 30+ client accounts and project timelines for freelance B2B design assets.