

BENJAMIN PERKINS

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EDUCATION

University of California, Merced

B.S., Computer Science & Engineering

Merced, CA

2024 – 2029

GPA: 3.68 | Dean's Honor List (3×) | Planned second major: Electrical Engineering

Coursework: Data Structures, Assembly & Computer Organization, Vector Calculus, Linear Algebra, Physics.

EXPERIENCE

Coherent Corp. – Embedded Systems Intern

Firmware Toolchain Migration & Enterprise AI

Fremont, CA

Jun 2026 – Aug 2026

- Own an eight-week evaluation of a licensed embedded toolchain against STM32Cube/GNU, rebuilding identical firmware targets and comparing compiler diagnostics, binaries, map files, flash images, and behavior on hardware.
- Trace the full build chain—from Makefiles and compiler flags through linker scripts, memory maps, flash layout, and device programming—to isolate migration gaps and document repeatable fixes.
- Built a repo-aware Codex migration harness using project-specific Markdown instructions, validation checkpoints, and repeatable tests to speed migration analysis across an unfamiliar firmware codebase.
- Evaluate Unity-based embedded unit testing and teach engineers practical AI workflows for navigating unfamiliar firmware, build systems, and migration work.

Elev Inc. – Co-Founder | elevmarket.com

Nonprofit Data Collection & Evidence Platform

Merced, CA

Dec 2024 – Present

- Co-founded and built an AI evidence platform that turns program goals, grants, staff roles, schedules, and field submissions into tailored collection strategies and source-backed reports.
- Secured a fully paid \$12K six-month design pilot with Boys & Girls Club of Merced County and a paid \$1K engagement with Merced United; projecting \$24K in 2026 revenue.
- Grew Elev to 50–60 monthly active users after 10 months of product iteration with both organizations; now preparing pilots with Merced Parks and Recreation, Youth for Christ, and ARTREE.
- Elev-supported evidence helped Merced United strengthen funding efforts tied to \$306K+ in confirmed awards from the Central Valley Opportunity Fund and First 5 Merced County.
- Architected a React/TypeScript, Node/Express, FastAPI/LangGraph, PostgreSQL/pgvector, Redis, and Azure system; co-inventor on provisional U.S. patent application No. 64/076,917, filed May 28, 2026.
- Incorporated Elev as a Delaware C-Corp through WilmerHale QuickLaunch and presented the company at Google Developer Groups DevFest Central Valley 2025.

YuCCA Lab – Undergraduate Research Assistant | yuccalab.ucmerced.edu

Robotics Perception, Visualization & SLAM | Prof. Xiaofan Yu

Merced, CA

Feb 2026 – Present

- Configured the ROS2 stack for an existing research rover on a Jetson Orin Nano, integrating Livox LiDAR and Intel RealSense RGB-D drivers and bringing both sensor modalities online for mapping, visualization, and later navigation work.
- Built and validated sensor pipelines that stream live LiDAR returns into point-cloud topics and expose RGB-D camera data in RViz, verifying that both feeds publish correctly for downstream perception and SLAM.
- Installed and configured Foxglove Bridge to publish ROS2 topics over WebSocket, enabling remote visualization and debugging of LiDAR point clouds and camera streams during sensor bring-up and SLAM testing.
- Deployed and configured ROS2 SLAM on the Jetson to consume live sensor topics for mapping and localization, producing map and pose outputs as the baseline for future autonomous navigation and world-model research.

Society of Asian Scientists and Engineers (SASE) – Web Development Intern

UC Merced STEM Student Organization

Merced, CA

Aug 2024 – May 2026

- Analyzed the chapter website's full-stack architecture and led a database-design workshop for 90–100 multidisciplinary hackathon participants with mixed technical experience.

TECHNICAL SKILLS

Languages: C/C++, Python, JavaScript/TypeScript, SQL, ARM Assembly

Firmware/Robotics: IAR Embedded Workbench, STM32CubeIDE/GNU Arm, Makefiles/linkers, ROS2, LiDAR/RGB-D

Software/AI/Data: React, Node/Express, FastAPI/LangGraph, PostgreSQL/pgvector, Redis, RAG, OpenAI Codex, Azure