Dane Dathrego

San Luis Obispo, CA d.a.dathrego@gmail.com

TECHNICAL SKILLS

Languages: C/C++, SQL, Python, SystemVerilog, JavaScript, HTML, CSS, Java
Frameworks & Platforms: React, Node.js, Express, Jest, Git, MongoDB, Xilinx Vivado, Linux, RISC-V
Embedded & Hardware: SPI, I2C, UART, GPIO, Oscilloscopes, Logic Analyzers, Multimeters, Soldering
Domains: Full-Stack Development, Embedded Systems, Robotics, Computer Networking, Database Management, Agile Development, Signal Processing, Electrical Circuits, Operating Systems

PROJECTS

Poly1rover Project Port II — *CPE Capstone I/II and Senior Project* **September 2025 - Present**

- Porting the SIMBA Mars rover system to a Xilinx Zynq-7020 ROACH embedded platform to enable low-power autonomous operation
- Implemented SPI and I²C communication interfaces using SystemVerilog in Xilinx Vivado to interface with sensors and Wi-Fi modules, while optimizing OS footprint for eMMC constraints.
- Integrating and testing motor control, robotic arm subsystems, and AI vision pipelines using C, validating autonomous operation with software-controlled power management and demo mode startup

What's For Dinner? — *Software Engineering I/II* **January 2025 - June 2025**

- Designed and developed a full-stack web application using Agile development, participating in requirements gathering, UI/UX design, and sprint execution
- Implemented features across the stack using React, Node.js/Express, and MongoDB, with automated testing with Jest to support deployment and continuous improvement

Frequency-Controlled Actuator — *Electrical and Electronic Circuits* **April 2024 - June 2024**

- Collaborated on design, construction, and testing of a modular signal-processing actuator system that drives a solenoid based on frequency analysis of input audio signals
- Utilized laboratory equipment including oscilloscopes, bench power supplies, and multimeters to validate signal integrity, voltage levels, and actuator response

EDUCATION

California Polytechnic State University, San Luis Obispo, CA **September 2022 - June 2026 (Expected)**
— *B.S. Computer Engineering, Minor in History*

- Fourth year undergraduate with a 3.6 GPA
- Member of the Computer Engineering Society and Cal Poly CS+AI
- **Notable Coursework:** Systems Programming, Computer Architecture, Operating Systems, Software Engineering, Computer Security, Computer Networks, Database Systems, Project-Based Programming and Design, Digital Signals and Systems, Microcontrollers, Electronic Circuits

EXPERIENCE

Cal Poly ITS Client Services, San Luis Obispo, CA — *Student Assistant* **January 2026 - Present**

- Provide hardware, software, and network support to faculty, staff, and students, troubleshooting Windows, macOS, iOS, and Android devices and maintaining tickets in Jira
- Configure, image, and deploy computers and peripherals while delivering clear, professional guidance to non-technical users

e2f, Los Altos, CA (Remote) — *AI Research Intern* **July 2025 - September 2025**

- Analyzed and documented machine learning and AI systems, producing detailed reports that supported internal research and product development decisions
- Contributed high-accuracy data annotation and quality review to support model training, evaluation, and benchmarking pipelines
- Gained hands-on exposure to real-world AI workflows, including how models are trained, tested, validated, and deployed within a commercial business environment