

Alex Herman

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Education

California State Polytechnic University, San Luis Obispo

Bachelor of Science in Computer Engineering

- ★ **Expected Graduation:** June 2026
 - ★ **Class:** Junior
 - ★ **GPA:** 3.61
 - ★ **Relevant Coursework:** Capstone, Microcontrollers and Embedded Systems, Computer Design and Assembly Language, Data Structures, Digital Signals and Systems, Systems Programming
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Technical Experience and Projects

OTO: Smart Motor Capstone Project |

Winter 2024 - Present

Technologies: C, KiCad, I2C, Notion, Technical Reports and Documentation, Research

- ★ Building the Smart Motors of the future by integrating closed loop PID control directly into prime movers.
- ★ Designing an I²C-based control protocol of up to 7 wireless (BLE) or 40 wired devices with feedback.
- ★ Learning KiCad to layout the PCB, integrating BLE, motor driver, the RP2040 and buck converter, with plans for further integration of the quadrature encoder

BeatBox: A Terminal-Based GarageBand-style Music Maker |

Fall 2024

Technologies: C, STM32CubeIDE, UART, PWM, Circuit Design, Technical Reports

- ★ Fully designed a circuit and program for use on an STM32 board that allowed a user to create songs by selecting notes in a UART connected terminal, which could then be saved and played by a speaker and servo (configurable drum kit).

Foot Mouse for Sally - Empower Club |

Fall 2024 - Present

Technologies: ArduinoIDE, Mentorship, CAD, Technical Diagramming, Presenting

- ★ Selected as hardware design technician for an accessible foot mouse project (5 engineers). Under client specification and project constraints, designing and prototyping an Arduino solution for seamless integration into the clients existing workflow. Presenting our ideas and product to the client.
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Leadership and Extracurricular Activities

Ultimate Frisbee Team Captain |

Fall 2022 – Present

- ★ Achieved A-team placement as a freshman, demonstrating exceptional athletic and team skills.
- ★ Elected captain of the B-team, balancing leadership responsibilities with academic priorities.
- ★ Currently designing and hosting a website for team organization and communication.

Ocean Lifeguard – City of Santa Cruz Fire Department |

Summer 2021 – Present

Beach Lifeguard I, Junior Guard Instructor

- ★ Ensured beach safety through vigilant water monitoring, rescues, and proactive public engagement.
 - ★ Trained and mentored Junior Guard participants, fostering leadership and water safety skills among youth.
 - ★ Coordinated instructional activities and managed volunteer and staff schedules.
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Programming Languages: C, SystemVerilog, Python, RISC-V Assembly, Java

Software Tools: LTSPICE, Fusion 360, Vivado, Matlab, Android Studio, STM32CubeIDE, KiCad

Languages: Spanish (Conversational)

Certifications: CPR and Title 22 First Aid, Cal Poly Emerging Leaders Certificate

Interests: Rock Climbing | Cooking | Botany | 90s Hip Hop | Watercolor