

BRADEN MONROE

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EDUCATION

University of California, Santa Cruz

Sept 2023 - June 2027

- ❖ Major in Robotics Engineering, Minor in Electrical Engineering
- ❖ Unweighted Cumulative GPA: 3.69
- ❖ Member of UCSC's College Scholars Program

Sept 2023 - Sept 2024

WORK EXPERIENCE

Baskin Engineering Lab Support (BELS)

February 2025 - Present

- ❖ Maintain and troubleshoot laboratory equipment supporting 13+ upper-division engineering courses.
- ❖ Support students with embedded hardware, instrumentation, fabrication tools, and laboratory operations.

ENGINEERING PROJECTS

Autonomous Target-Seeking Robot

- ❖ Developed embedded firmware for autonomous IR target acquisition using finite-state control.
- ❖ Integrated sensors, PWM motor control, and closed-loop navigation.

Wearable Hand Motion Tracking Device

- ❖ Developed embedded device to measure finger flexion and hand motion using analog sensors and real-time signal processing.
- ❖ Designed embedded firmware, sensor interfaces, wireless communication, and a compact handheld enclosure.

Subway Slugging FPGA Video Game

- ❖ Designed a complete VGA video game in Verilog on the Basys3 FPGA.
- ❖ Implemented multiple FSMs for gameplay, rendering, and collision detection.

PUBLICATIONS

A Qualitative Examination of the Influence of AI on Social Media Companies

Journal of Student Research, High School Edition, Vol. 12 No. 1 (2023)

- ❖ Published research examining AI adoption and future applications in social media marketing.

TECHNICAL SKILLS

Languages: C/C++, Python, Java, MATLAB, JavaScript, HTML/CSS

Embedded: STM32, ESP32, Verilog, PlatformIO, SPI, I²C, UART, PWM, ADC

Engineering: Fusion 360, 3D Printing, Soldering, Oscilloscopes, Logic Analyzers, PCB Prototyping

Software: Git, GitHub, LaTeX, VS Code, Linux

LEADERSHIP

Safety and Space Coordinator, UCSC Slugbotics Team

2026-2027

Event Coordinator, UCSC Korean American Student Association

2024-2025

Member of UCSC Rocket Team, UCSC Rocket Team

2023-2025