BRADEN MONROE
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EDUCATION

University of California, Santa Cruz Expected June 2027

- Major in Robotics Engineering, Minor in Electrical Engineering
- Unweighted Cumulative GPA: 3.6
- Member of UCSC's College Scholars Program Sept 2023 - Sept 2024

WORK EXPERIENCE

Baskin Engineering Lab Support (BELS) February 2025 - Present

- Maintained laboratory equipment supporting dozens unique upper-division engineering courses
- Supported students with instrumentation, fabrication tools, and laboratory operations
- Ordered and distributed thousands of dollars of components through all engineering departments

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 firmware, sensor interfaces, wireless communication, and 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.

SKILLS

Languages: C/C++, Python, Java, MATLAB, JavaScript, HTML/CSS
Embedded: STM32, ESP32, Verilog, PlatformIO, SPI, I2C, UART, PWM, ADC
Engineering: OnShape, 3D Printing, Soldering, Oscilloscopes, Logic Analyzers
Software: Git, GitHub, LaTeX, VS Code, Linux

LEADERSHIP AND INVOLVEMENT

Safety and Space Coordinator, UCSC Slugbotics Team 2026-2027
Event Coordinator, UCSC Korean American Student Association 2024-2025
Varsity Golf Captain, Cupertino High School 2022-2023
Varsity Football Captain, Cupertino High School 2022-2023