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EDUCATION

University of California, Santa Cruz

Expected June 2027

B.S. Electrical Engineering

Relevant Coursework: Physics Series, Computer Systems and Assembly Language, Intro to Cybersecurity

TECHNICAL SKILLS AND INTERESTS

Languages: C, C++, Python, Java, Java Script, LaTeX

Areas of Interest: Power Systems, Circuit Analysis, Embedded Systems Development, KiCAD

Softwares: KiCad, OnShape, Fusion360, Vim, Linux

Soft Skills: Teamwork, Team management, Analytical Thinking, Attention to Detail, Effective Communication

Tools: Micro Soldering, Hot Air Reflow, Laser Cutting, 3D printing

Positions: UCSC Hivestorm Cyber Defense Coach, SLUG Linux User Group President, Slug Security External Outreach

EXPERIENCE

Avionics Electrical Lead

February 2024 - Present

UC Santa Cruz Rocket Team

Santa Cruz, CA

- Established and led the avionics team in designing a high-power rocket reckoning and active control system. Collaborated with a team of undergraduate students to develop and refine hardware solutions
- Directing a 12-person team in the development of subsystems including ARM-based MCUs, DCDC power systems, ADC processing, and precision MEMS sensors, including integration with a Real-Time Operating System
- Identifying and rectifying issues efficiently, ensuring adherence to internally set timelines and conformance to progress within other systems in our team
- Creating comprehensive internal and public documentation for electrical and software development, facilitating inter-team project execution and reducing project onboarding time by 4 weeks

3D Printing Zone Manager

December 2023 - Present

UC Santa Cruz Slugworks Creatorspace

Santa Cruz, CA

- Developed infrastructure, established protocols, and implemented training programs for a public 3D printing space leading to a 50% reduction in equipment downtime and 4x print success rate
- Oversaw training of 500+ students and staff in 3D printing while maintaining a fleet of 10 Bambu Labs 3D printers
- Overseeing operations in a machine shop, creator space, and multiple student organization spaces, optimizing resource allocation and ensuring efficient space utilization
- Adapting role dynamically to meet operational needs, improving responsiveness and operational efficiency

Airbraking Lead

August 2023 - May 2024

UC Santa Cruz Rocket Team

Santa Cruz, CA

- Lead a team in the mechanical development of a Variable Drag Airbraking System for integration into a high-powered solid propellant rocket designed for NASA's USLI competition
- Engineered a sophisticated and efficient airbraking system through close collaboration with team members, optimizing performance and functionality
- Improved system performance and reliability over previous design allowing for over 3x greater breaking capability
- Conducted rigorous ground testing verifying the system's flight capability, resulting in a 100% success rate

PERSONAL PROJECTS

Lightsaber

An intelligent light stick with integrated gyro and sound inputs

- Based on the ATSAM21 MCU with USB, gyroscope, sound inputs and outputs for neopixel LEDs and a laser diode. Incorporates LiPo battery charging, sensing, and power regulation
- Constructed in KiCAD with version management done through git. Collaborative design reviews carried out by peers

Kosic-2 Flight Computer

Flight computer designed for use with TVC and airbrake systems of lower powered rockets

- Designed a Teensy 4.1-based flight computer designed to control thrust vector control solid propellant rockets and actuate air braking systems while conducting real-time data processing
- Integrated power management, pyro charge outputs, gyroscope, accelerometer, magnetometer, and barometer
- Engineered small form factor PCB designed in KiCad
- Programmed State estimation, Kalman filtering, PID control loop implemented in C++