

Braydon Burkhardt

📍 22 Chorro St. Unit 303, San Luis Obispo, CA 93405 📞 (408)621-9733
✉ bmburkha@calpoly.edu 🌐 in/braydonburkhardt 🌐 braydonburkhardt.com

Electrical Engineering student with a strong background in avionics and power system engineering. Previous experience in electronics design, simulation, and testing from R&D projects, 3 satellites missions, and high-power rocketry. Adept at spacecraft systems engineering, PCB design, and interface control documentation. Additional work and interest in semiconductor engineering, 3D graphics programming, and microcontroller design.

EDUCATION

California Polytechnic State University, San Luis Obispo, CA Sept. 2020 - Present
Bachelor of Science, Electrical Engineering, Expected Graduation Spring 2024

EXPERIENCE

Lead Avionics Engineer Sept. 2020 - Present

PolySat - Cal Poly CubeSat Lab

- Lead for 13 electrical and computer engineers in satellite avionics, power, and comms subsystems
- Hired, trained, and mentored 10 new members and created training programs for PCB & systems design along with weekly learning workshops
- Managed timelines & electrical tasks for 2 CubeSats and 3 research projects
- Conducted trade studies and PCB designs for 7 flight boards which has included solar cells, deployable antennas, power switching, cameras, data handling, and payload interfacing
- Created a CubeSat power budget calculator in Matlab
- Collaboration and interface control documentation with external payload developers and customers

Attitude Determination Electronics Engineer Dec. 2021 - Aug. 2022

ETOILES

- Attitude Determination & Control System (ADCS) engineer responsible for integrating and testing a gyroscope, accelerometers, magnetometers, and a GPS system in a 3U satellite
- design of a magnet and hysteresis rod system for passive CubeSat stabilization
- Working directly with other team leads to effectively design and document a new avionics stack for PowerSat - a solar demonstration CubeSat mission to be launched from the ISS

Satellite Simulation Researcher June 2022 - Sept. 2022

Cal Poly Summer Undergrad. Research Program

- Programmed a modular 3U CubeSat orbital lifetime simulation capable of complex geometry and deployable systems in Matlab Simulink
- Developed a lookup table generation script for calculating exposed surface areas given a sun direction for modeling solar radiation pressure and power generation
- Used GPS and multiple GNSS constellations' past orbital data to make a computationally-efficient simulation to assist in patch antenna design and placement considerations

Recovery Systems Engineer June 2020 - Present

The Stratus Project

- Built a recovery system with drogue and main chutes using a black powder ejection system for a L2 1.8m rocket
- Developed a flight board with multi-supply power regulation, a microcontroller, external data storage, telemetry sensing, GPS, and radio systems that can handle high vibration environments

AWARDS & SKILLS

Eagle Scout Rank, Boy Scouts of America, 2020

2nd Place National Finalist, United Launch Alliance Student Payload Competition, 2019

Altium, Autodesk Eagle, LTspice, PSpice

Java, C++, C#, Verilog, RISC-V, Matlab & Simulink

Fusion 360, SolidWorks, Maya, Cura, Unreal Engine

Semiconductor design, integrated circuit design