Conor Van Bibber

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Education

University of California, Berkeley
Senior, Electronics + Mechanical Engineering *Expected Graduation Spring 2025*
Extracurriculars: Space Technologies And Rocketry at Berkeley, Berkeley IEEE Student Branch
Relevant Coursework:

- 3D Modeling & Design
- Thermodynamics
- Statics & Dynamics
- Electronics for IOT
- Tolerancing & Manufacturing
- PCB Design
- Mechatronics Design
- FPGA Programming

Experience

SpaceX
Starship Avionics Hardware Engineering Intern *May 2024 - August 2024*

- Developed, tested, and troubleshooted avionics flight hardware and firmware to support guidance, navigation, and control including inertial measurement units, flight computers, and networked cameras
- Conducted flight qualification tests to emulate flight environments in shock, vibration, and thermal exposure

Embodied Dexterity Group
Research Engineer *September 2024 - present*

- Communicated with professors and PhD students to define system requirements, iterate on system designs, and effectively manage the integration of electronics within the wider project.
- Designed several PCBs for robotics research in novel locomotion mechanisms, specializing in high current power supplies, brushless and brushed DC motor controllers, and wireless communication

Space Technologies And Rocketry at Berkeley
Avionics Lead *September 2021 - present*

- Overhauled existing avionics systems by leading design & manufacture of new, flight-ready custom PCBs for live telemetry, data storage & management, power management, and sensor fusion.
- Reduced cost of avionics over alternatives by over 65% while increasing reliability and improving features.

Payload Lead *September 2022 - May 2023*

- Led design, prototyping and manufacturing phases for an analog seismograph payload for use in the 2023 IREC rocketry competition.
- Constructed a prototype muon-based altimeter, using principles of special relativity to create a product with potential use cases on space stations and satellites.
- Conducted design reviews for multiple projects, adhering to NASA standards.

Hands-On PCB Engineering
Lead Instructor, Berkeley IEEE Officer *December 2022 - present*

- Taught lectures and lab sections with over 1000 students about fundamentals of PCB engineering.
- Ensured the successful design and prototyping of over $50,000 worth of PCBs over 7 semesters..
- Provided regular, individualized feedback to students to improve their projects and troubleshoot errors.

Projects

Flight Computer | Altium, Advanced PCB Design, Soldering, Microcontroller Programming, C++, LabVIEW

- Created an amateur rocketry flight computer utilizing advanced MEMS sensor and a 4-core microcontroller using real-time computing and complex kalman filters with 13 sensor inputs to reduce price compared to other systems by 400%, while improving capabilities and safety using triple modular redundancy.
- Brought up several iterations and variants to comply with varying design requirements

Skills

PCB Design (Altium, KiCad) / Advanced Additive Manufacturing (SLA, MJF, Polyjet, SLS, FDM 3D Printing) / FPGA Programming (Xilinx Zynq, iCE40) / Computational Fluid Dynamics (Ansys, OpenCFD) / Finite Element Analysis (Ansys, Autodesk, Solidworks) / Computer Aided Design (Solidworks, AutoCAD, Fusion 360) / Machining and Metalworking (TIG Welding, Lathe, Milling, CNC Machining) / Microcontroller Programming (nRF52, ESP32, STM32, Teensy, Micropython, Arduino) / Generative Design & Algorithmic Engineering