

BRYCE WALKER

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PORTFOLIO



EDUCATION

COLORADO SCHOOL OF MINES

B.S. Electrical Engineering | Minor in Computer Engineering

Relevant Courses: Advanced Digital Design, Circuits, Computer Organization, Data Structures and Algorithms, Signals I and II

GOLDEN, CO

3.6 GPA, Dean's List

ENGINEERING EXPERIENCE

SECOND ORDER EFFECTS

EL SEGUNDO, CA

Electrical Engineering Intern

May 2025 – August 2025

- Designed spacecraft hardware, schematics and PCBs in Altium Designer, including those for a satellite flight computer and power distribution unit. Utilized specialized knowledge to complete design work ahead of schedule leading to the securing of additional contracts.
- Supported bring-up and hardware debugging of spacecraft systems, requiring deep Linux kernel and hardware knowledge.
- Provided key information in customer design reviews on the subsystems owned and supported.
- Designed UVM testbench in System Verilog for FPGA video pipeline; authored UVM driver and monitor in adherence to sensor datasheets.
- Developed custom application specific Yocto Linux kernel, owning the development of FPGA over-the-air update kernel drivers.

MINES FORMULA SAE

GOLDEN, CO

Lead Electrical Engineer

March 2025 – Present

Electrical Engineer

August 2024 – Mar 2025

- Directed development of Mines Formula's first industry-standard automotive harness and distributed STM32 CAN data/control architecture.
- Transformed team structure and introduced project planning methods rapidly accelerating 2026 vehicle timeline.
- Developing educational lectures and projects to introduce the next generation of engineers to circuit and PCB design.
- Coordinated stakeholder design reviews and ensured hardware/software integration through robust technical requirements.
- Spearheaded bring up efforts on competition critical analog PCBs requiring SMD rework and creative hardware hacking.
- Designed PCBs in Altium Designer including a custom M.2 telemetry module and real-time vehicle dashboard providing critical real-time vehicle statistics to drivers and engineers.

SURGICAL COATINGS, LLC

LITTLETON, CO

Project Engineer

May 2024 – December 2024

Engineer I

June 2021 – May 2024

- Architected electrical/control systems for next generation production line boosting production capacity by 270%.
- Selected and managed subcontractors, project budgets, item boards, Gantt Charts, success metrics, execution plans and oversee implementation to ensure timely completion within budget constraints.
- Replaced mission-critical LabVIEW hardware and software with custom embedded solutions written in Rust and C, increasing production line uptime to 99% and contributing to a 23% gross profit increase for a flagship product.
- Conducted extensive mechanical design work on the "next generation" automated production line including chain-on-rail drive components, a welded steel frame, and automated gantry ensuring precision and efficiency.
- Developed technical breakthroughs under NDA with patents pending, including an innovation that improved core function by 253% when compared to competitors, opening access to a market projected to reach \$118.4 million by 2030.

PROJECT EXPERIENCE

FPGA OSCILLOSCOPE AND FUNCTION GENERATOR

2025 – PRESENT

- Working with a team to develop and design a digital Oscilloscope and Function Generator, implemented on a Xilinx Zynq development board.
- Gateway written in VHDL utilizing conventional test benches in the Vivado IDE.

CUSTOM UAVs

2014 – PRESENT

- Designed and piloted drones with real-time HD video/telemetry links, black-box logging, and tuning.
- Careful selection and integration of electrical and mechanical components to maximize performance based on flight criteria.

HABITLAB

2023

- AI-assisted habit tracking tool in Rust, Python and web stack; integrated LLM for user insights.
- Presented at the Mines innovation fair.

STONESCOPE

2023

- CLI in C++ with custom Touchstone parser and lightweight plotting library for RF engineers.
- Sees limited use in industry for quickly plotting large files.

TECHNICAL SKILLS

- Hardware & Design: Altium Designer, SPICE, PCB Layout, FPGA Digital Design (Verilog/VHDL/System Verilog), Vivado, Quartus, Radiant, SolidWorks, Automation Systems, PCB Bring up
- Programming: C, C++, Rust, Python, Assembly (RISC-V), Embedded RTOS, Embedded Linux, Yocto
- Other: Project Leadership, Technical Writing, Rapid Prototyping, SMD Rework, Soldering, MS Office Products