United States Citizen

Brendan Haines

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EDUCATION

UNIVERSITY OF COLORADO
MS in Electrical Engineering
Dec 2020 | Boulder, CO
Cum. GPA: 3.820

UNIVERSITY OF COLORADO
BS in Electrical and Computer Engineering
Dec 2020 | Boulder, CO
Dean's List (all semesters)
Cum. GPA: 3.841

SKILLS

ELECTRONICS
Design & Analysis
• Altium • KiCad • SPICE
Electromagnetics
• HFSS • AWR
Digital Simulation
• Icarus Verilog • ModelSim
Manufacturing
• Population and rework down to 0201

PROGRAMMING
Most experienced with embedded systems, data analysis, and visualization
Most familiar with:
• Python • C • Verilog • SystemVerilog
Experience with:
• C++ • Matlab • Mathematica • Bash
• VHDL • Java • Arduino
• RISC-V Assembly • ARM Assembly
Markup:
• Markdown • LaTeX
Deployment & Continuous Integration:
• Docker • Gitlab CI • Github Actions

MECHANICAL
Design:
• SolidWorks • OpenSCAD
Manufacturing:
• 3D printer • laser cutter
• manual mill and lathe
• limited CNC experience

MISCELLANEOUS
Amateur Radio: KEØHSC (extra class)
Paraglider Pilot: USHPA P2 Rating
High Power Rocketry: Tripoli L1
Scuba Diver: PADI Open Water
Alpine Skier

EXPERIENCE

FIRST RF | Senior Electrical Engineer
May 2020 - Present | Boulder, CO
- Technical owner of multiple programs valued in millions of dollars.
- Collaborate in a small, interdisciplinary team to bring a product from initial concept to production and qualification.
- Architect, design, and build an AESA (phased array antenna) at X band for airborne radar.
- Learn and iterate quickly with a fail fast mindset.
- Design for manufacturability, testability, and repairability.
- Develop programmable logic (CPLD) for array control and self-protection.
- Debug hardware, firmware, and test suite software.
- Present system design and measured functionality in a cohesive manner to internal and external stakeholders.
- Demonstrate growth areas for potential customers by rapidly prototyping proof-of-concept systems.
- Improve yield and reduce programmatic risk through direct involvement with contract manufacturers.
- Interface directly with customer engineers and management to ensure overall functionality, including specification refinement and backwards-compatibility.
- Guide mechanical design for tight electrical-mechanical integration.
- Incorporate modularity into tightly integrated systems to enable rapid innovation of new products through leverage of existing designs.
- Mentor new hires and other engineers.

FIRST RF | Intern
Jan 2018 - May 2020 | Boulder, CO
- Designed active RF electronics and passive structures for L - X band.
- Debugged RF and embedded systems, including reverse-engineering and accommodating for silicon errors in pre-release parts.
- Developed preliminary DSP tools for integration of radios into active antennas.
- Mentored other interns.

PROJECTS

LOW-COST NETWORK ANALYZER | Individual
In Progress
Vector network analyzers are very useful for RF system design and testing but most are prohibitively expensive for hobbyists. This low cost VNA based on the ADI Pluto software defined radio is usable up to 6GHz.

HIGH POWER ROCKET IGNITER | Individual
2019-2020
High power rockets require very large standoff distances for human safety and extremely long wires are obnoxious to deploy. This ignition system replaces wires with an amateur radio link. It was designed primarily with redundancy and robustness in mind due to its safety critical nature.

CELL PHONE FOR THE ELDERLY | Group Course Project
September – December 2016
To address struggles of elderly who face miniaturization of technology, this prototype cell phone maintains the user interface of land-lines while gaining wireless portability.