Marshall Bruner

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EXPERIENCE

Ball Aerospace — Jun 2021 — Jul 2023
RF Engineer — *Westminster, CO*
- Designed and debugged multiple complex, mission-critical RF boards under strict time constraints
- Simulated, designed, and tested an RF Front-End PCB at extreme temperatures
- Schematic capture and layout of RF T/R systems (RF, digital, power), antenna range test equipment, component testing coupons, etc.
- Helped develop an embedded webpage used to control phased array electronics
- High sensitivity electronics testing (noise, high power, etc.)

Colorado State University — Jan 2021 — May 2022
Graduate Research Assistant — Thesis focused on Radar — *Fort Collins, CO*
- Design, schematic, and layout of a modular, X-band, FMCW drone radar
- Signal processing / data visualization for Analog Device's FMCW Phaser Radar Board
- Presented the work at the IEEE International Phased Array Symposium
- Phaser board work was presented by ADI at IMS 2022 and IEEE-APS 2022

CHILL Radar Lab — May 2020 — May 2021
Lab Assistant — *Greeley, CO*
- Built a server to host and display real-time and historical radar data using PostGreSQL, Flask, Python
- Performed characterizations and measurements of radar equipment

EDUCATION

Colorado State University — Jan 2021 — May 2022
*M.S. Electrical Engineering — **GPA: 3.9*** — *Fort Collins, CO*
Thesis - Design, Deployment, and Cost Considerations for DARMA; A Low-Cost and Lightweight FMCW Radar

Colorado State University — Aug 2017 — May 2021
*B.S. Electrical Engineering — **GPA: 3.47*** — *Fort Collins, CO*

PROJECTS

FMCW Radar Bootcamp — Mar 2023
- Developed signal processing software and a presentation for an FMCW radar to present at the 2022 AESS Radar Bootcamp

5G Electronics Senior Design Project — Jun 2020 — May 2021
- Simulated, assembled, and measured a full 5G receiver system
- Created teaching documentation for a 5G transmitter and receiver for FR1 and FR2 frequency bands
- Experience using FieldFox, EMPro, ADS, SystemVue

Fuzzy Logic Clutter Filter — Nov 2020 — Dec 2020
- Applied the Fuzzy Logic machine learning technique as a radar clutter filter

SKILLS & ABILITIES

Languages: Python, Rust, C, Bash, SQL, Matlab, NuShell, JavaScript
Design / Simulation Tools: AWR Microwave Office, HFSS, KiCad, QucsStudio, LTSpice, Cadence
Technologies / Tools: Benchtop measurement equipment (VNA, Oscilloscope, etc.), Git, LaTeX, Linux, Docker, PostGreSQL, Flask
Communication: Excellent Technical Communication and Presentation Skills, Experience Presenting PDR/CDRs, Technical Presentation Formatting