Marshall Bruner

Denver, CO

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EXPERIENCE

Ball Aerospace   **Jun 2021 — Jul 2023**
RF Engineer   *Broomfield, CO*
- Designed and debugged multiple complex, mission-critical RF boards under strict time constraints
- Simulated, designed, and tested an RF Front-End PWB at extreme temperatures
- Schematic and layout of RF T/R systems (RF, digital, power), antenna range test equipment, component testing coupons, etc.
- Used Python knowledge to create useful plotting and RF analysis tools
- Built an embedded webpage used to control/monitor phased array electronics
- High sensitivity testing (noise, high power, etc.) of electonics

Colorado State University   **Jan 2021 — May 2022**
Graduate Research Assistant — Thesis   *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 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**
- Helped develop a talk on FMCW radar and corresponding software for 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, HTML, CSS
Design / Simulation Tools: KiCad, AWR Microwave Office, HFSS, QucsStudio, LTSpice, Cadence Virtuoso
Technologies / Tools: Git, LaTeX, Linux, Docker, PostGreSQL/TimescaleDB, Flask, Celery (Distributed Tasks)
Communication: Excellent Technical Communication and Presentation Skills, Experience Presenting PDR/CDRs, Technical Paper/Presentation Formatting, Concise Code Documentation