Marshall Bruner

Denver, CO

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EXPERIENCE

Ball Aerospace **Jun 2021 — Jul 2023**
RF Engineer *Broomfield, CO*

- Used Python knowledge to create useful plotting and RF analysis tools
- Simulated, designed, and tested an RF Front-End PWB at extreme temperatures
- Debugged complex, mission-critical RF boards under strict time constraints
- Built an embedded webpage used to interact with a phased array antenna
- High sensitivity testing (noise, high power, etc.) of electonics

Colorado State University **Jan 2021 — May 2022**
Graduate Research Assistant — Thesis *Fort Collins, CO*

- Built a server to host and display real-time / historical radar data using PostGreSQL, Flask, Python
- 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 Internation 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 real-time radar display to easily display and animate radar data
- 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

Algorithmic Stock Trading Server **Aug 2022 — Present**

- Task scheduling system (backfilling data into PostGreSQL database, computing custom indicators, run entry / exit strategy)
- Containerized using docker
- Command-line interface for checking status, getting recent trades, etc.
- Discord bot for general notifications / monitoring
- Dashboard using Plotly Dash and a Flask API (early stages)

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

Fuzzy Logic Clutter Filter **Nov 2020 — Dec 2020**

- Applied the Fuzzy Logic machine learning technique to radar data to filter clutter

SKILLS & ABILITIES

Languages: Python, C, Rust, Bash, SQL, NuShell, Matlab, JavaScript, HTML, CSS
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