

MARSHALL BRUNER

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EXPERIENCE

Ball Aerospace (DoD Clearance)

Jun 2021 — Jul 2023

RF Engineer

Broomfield, CO

- Built data visualization ([Matplotlib](#), [Plotly](#)) and analysis tools in [Python](#)
- Simulated, designed, and tested an RF Front-End PCB 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 electronics

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 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 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.
- Analysis / forecasting using [Pandas](#), [Numpy](#), [PyTorch](#)
- Dashboard using [Plotly Dash](#) and a [Flask](#) API

FMCW Radar Bootcamp

Mar 2023

- Helped develop a talk on FMCW radar and corresponding software for the 2022 AESS Radar Bootcamp

Keysight 5G Electronics Senior Design Project

Jun 2020 — May 2021

- Simulated, assembled, and measured a full 5G receiver system
- Created documentation for an instructional university course

SKILLS & ABILITIES

Languages: [Python](#), C, Rust, Bash, [SQL](#), NuShell, Matlab, JavaScript

Technologies / Tools: [Git](#), [Linux](#), [Docker](#), [PostgreSQL](#), [SQLite](#), [Pandas](#), [Numpy](#), Flask, Celery

Communication: Excellent Technical Communication and Presentation Skills, Experience Presenting PDR/CDRs, Technical Paper/Presentation Formatting, Concise Code Documentation