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 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.
- 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**, **Visual Basic**, 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