Max Marshall

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EDUCATION

B.S. in Aeronautical Engineering, Dual Major in Computer Science **2018 – 2023**
Rensselaer Polytechnic Institute *Troy, NY*

WORK EXPERIENCE

NASA Johnson Space Center **Summer 2022**
USRA Intern *Houston, TX*

- Created a tool to perform post-flight analysis for Artemis I, examining the usage of star catalogs
- Made significant headway into programming a dependency-free JPEG reader in C++
- Rewrote camera calibration code for the Orion Docking Camera as OOP to interface with gimbal
- Helped generate documentation for and troubleshoot Spatial Analyzer for use with theodolites

NASA Johnson Space Center **Spring 2022**
Undergraduate Researcher *Remote - Houston, TX*

- Assembled, tested, and operated a star tracker from Commercial Off-the-Shelf (COTS) components
- Debugged and added functionality to open-source software in development by NASA

RPI Center for Earthquake Engineering Simulation **Fall 2020 & 2021**
Undergraduate Research Assistant *Troy, NY*

- Created and debugged python code for an automated saturation system using OpenCV
- Provided experience with electrical systems for centrifuge controller maintenance

City of Woburn Engineering Dept **Fall 2016 - Fall 2018, Summer of 2019 & 2021**
Paid Intern *Woburn, MA*

- Performed outfall and catch basin inspections as part of the city's Stormwater Taskforce
- Drew plot plans and subdivisions in AutoCAD

PROJECTS

Cluster Computer **On-going**

- Creating a cluster computer from a number of single board computers (SBC)s via MPI
- Wiring, booting, networking, and writing software to manage the clusters jobs, power, and temperature
- Adding extra accessibility in the forms on a Discord bot and React/NodeJS monitoring website

Go-To Telescope **On-going**

- Designing, 3D-printing, building, and programming an open source go-to telescope
- Hacking an 18V rechargeable drill battery to use as a power source and discarded stepper motors to drive it
- Writing code to predict the locations of astral bodies given the current time and coordinates

HomeLab **On-going**

- Teaching myself networking principles via laying out and implementing by own network infrastructure
- Hosting assorted services and utilities both locally and externally from my own domain
- Virtualizing my codebases and storing them on one centralized server, which I access remotely

TECHNICAL SKILLS

Languages: Python, C/C++/C#, MATLAB, Bash, LaTeX, JS
Software: Fusion360, STK, MATLAB, Simulink, Siemens NX, AutoCAD, Spatial Analyzer
Experienced with: Linux, MPI, Parallel Computing, Microcontrollers, Git

COURSEWORK

- Space Vehicle Design
- Propulsion Systems
- Aerodynamics
- Numerical Design Optimization
- Principles of Software
- Computer Organization
- Algorithms
- Data Structures