NICHOLAS HARRAS

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EXPERIENCE

National Oceanic and Atmospheric Administration Princeton, NJ
Computer Operator *June 2019 - present*

- Utilizing **Slurm** and other command line tools to maintain various HPC systems scientists at the Geophysical Fluid Dynamics Lab rely on for their weather modeling
- Developing **Python** and **tcsh** scripts to automate various maintenance tasks
- Working with a Help Desk ticketing system to assist scientists, often with **SSH** and **X2Go** connections, **Slurm** errors, and compiler issues

SEMGeeks Belmar, NJ
Web Development Intern *September - December 2017*

- Worked closely with web developers and designers to help create websites for small businesses
- Utilized **WordPress** and **HTML/CSS** in a professional setting
- Researched malicious **PHP** scripts that had stolen client information using steganography

SKILLS

- **Programming Languages:** Proficient in Python, C, and Java; Familiar with C++, JavaScript, and Lisp (Scheme)
- **Technology and Software:** Vim, Git, bash, tcsh, Nmap, WireShark, VirtualBox, InfluxDB, MySQL, JSP, AWS (RDS and EC2), HTML/CSS LaTeX
- **Clearance:** Public Trust

PROJECTS

HPC Monitoring Dashboard

Grafana metrics dashboard for various statistics pertinent to monitoring GFDL/NOAA HPCs, utilizing an **InfluxDB** database and **Python**

- Developing **Python** wrappers of **Slurm** and system functions to constantly update an **InfluxDB** database
- Writing software as part of a small team, prioritizing portability and readability
- Working with other operators to find the most useful data representations for their needs

AWS Databases Project

eBay-inspired database model, built with an **AWS MySQL** server and **JSP** webpages

- Gained experience working with the **AWS** platform, hosted the database on **RDS** and the front-end on **EC2**
- Modeled a relational database out before implementation, learned about database best practices
- Built the front-end using **JSP** to manage POST and GET requests, gained experience structuring **HTTP** requests

Dungeons & Dragons Supplement

A command line tool written in **Python** for generating a randomly generated game environment and for keeping track of player and NPC locations. The premise of this setting involved a series of magical doors which could randomly rearrange themselves; I figured a program was the easiest way to implement it.

- Modeled my setting concept out as a graph and approached a software solution using discrete math
- Implemented various additions over time, such as player and NPC mobility and save functionality
- Optimized map generation by utilizing a master dictionary for reference and an "in use" one, which could be manipulated at will by the user, sacrificing some space-complexity for better run-time.

EDUCATION

Rutgers University New Brunswick, NJ
B.S. in Computer Science *August 2018*

- **Related Coursework:** Linear Optimization, Computer Security, Databases, Internet Technology, Systems Programming, Algorithms, Principles of Programming Languages, Intro to A.I., Computer Architecture, Discrete Structures I/II, Linear Algebra, Calculus I/II, Data Structures