NICHOLAS HARRAS

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EDUCATION

Rutgers University — New Brunswick, NJ
B.S. in Computer Science — *September 2014 - August 2018*

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

SKILLS

- **Operating Systems:** Windows 10, Ubuntu 16+, RHEL/CentOS 7+, OpenSUSE, Kali Linux 18+, ParrotOS Security 4.11, VirtualBox 6.1, Xen
- **Programming and Scripting:** Python 2.7/3, C, Java, Go, bash, PowerShell
- **Databases and Web Dev:** Apache 2.4, PHP 7/8, CodeIgniter, MySQL, PostreSQL
- **Security Tools:** Nmap 7.8, WireShark 3+, tcpdump, curl, wget, Metasploit Framework 6, Burp Suite Community Edition, DirBuster, Active Directory, LDAP
- **Clearance:** Public Trust
- **Certifications:** CompTIA Security+

EXPERIENCE

Institute for Genomics and Evolutionary Medicine – Temple University — Philadelphia, PA
IT Support Sepcialist — *September 2020 - present*

National Oceanic and Atmospheric Administration — Princeton, NJ
Computer Operator — *June 2019 - February 2020*

- Utilized **Slurm** and other command line tools to maintain various Federal **OpenSUSE Linux** HPC systems that scientists at NOAA's Geophysical Fluid Dynamics Lab rely on for their weather modeling
- Responded to or handed off approximately 10 tickets a day within **OTRS**, in a workplace of about 200 users.
- Answered phones and assisted climatologists and engineers with technical issues, often with **SSH** tunnelling, **X2Go** connections, **Slurm** errors, and compiler issues
- Developed **Python** and **tcsh** scripts to automate various maintenance tasks

PROJECTS

HPC Charge Code Calculator

Python command line tool written to expedite the process of issuing charge codes to HPC systems according to downtime.

- Algorithmically designed to handle any and all possible charge code combinations
- Addressed a real workflow bottleneck, reduced time spent calculating charge codes to near-instantaneous
- Began as a personal project, but was adopted by the other operators, and became part of our **GitLab** as an ongoing, official project

HPC Monitoring Dashboard

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

- Developed **Python** wrappers of **Slurm** and system functions to constantly update an **InfluxDB** database
- Worked with operators to ensure the user experience of the **Grafana** displays were helpful to their workflow
- Provided reliable uptime logs over time, which proved incredibly helpful for HPC monitoring and troubleshooting, for instance in the event of an outage.

Operators' Log Migration

Long term project with the goal of moving 30 years of Operators' log from text files to a relational database, utilizing **Python**, **SQLite** for testing, and to ultimately write to a **MySQL** database

- Tested a wide variety of methods to iterate through and parse 200,000 text files, resulting in a final algorithm with a runtime 40% faster than the original implementation
- Sanitized data and implemented quality controls to ensure no data loss
- Carefully tested only portions of the logs before determining that we were ready to migrate the logs in its entirety