

# Houlton McGuinn

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📁 [github.com/hmcguinn](https://github.com/hmcguinn)

## Education

Expected December 2022 **B.S. in Computer Science**, *University of North Carolina at Chapel Hill, Chapel Hill, NC*. 3.559 GPA.

## Skills

**Python** | **Java** | **JavaScript** | **Docker** | **Elasticsearch** | **Scikit-Learn**

## Experience

- September 2020 – Present **Research Assistant**, *Kenan-Flagler Business School, Chapel Hill NC*.
- Led development of open-source web scraping tool to efficiently scrape 10M+ webpages from the SEC's EDGAR database for Form 3 and Form 4s.
  - Analyzed data to determine company hierarchy and how executive teams change.
- May 2020 – August 2020 **Software R&D Intern**, *Sandia National Laboratories, Livermore CA*.
- Led integration of novel machine-learning model into existing Python application to support batch network analytics on Elasticsearch database.
  - Refactored application to become model agnostic and support both labelled and unlabelled data for analysis with Scikit-learn.
  - Developed distributed service in Python to support malware analysis using Docker-containers, Kubernetes, and a RESTful api.
  - Created presentation highlighting technical progress and business achievements of project to senior leadership.
  - Practiced reverse engineering, memory forensics, and technical communication in fictional cyberattack scenario.

## Projects

- Python SEC Web Scraper**, [github.com/hmcguinn/sec-scraper](https://github.com/hmcguinn/sec-scraper).
- Web scraper using BeautifulSoup to pull EDGAR filings from SEC website.
  - Horizontally scalable across 400+ threads to improve scraping speeds.
  - Designed for distributed use across multiple systems.
  - Capable of interfacing with SLURM for high-performance computing clusters.
- Python SDR Random Number Generator**, [github.com/hmcguinn/rtlsdr-rng](https://github.com/hmcguinn/rtlsdr-rng).
- Random number generator using entropy from software-defined radio.

## Courses

- Fall 2020 Computer Organization (**Assembly/C**) | Computer Security Concepts (**Python**) | Modern Web Programming (**JavaScript**)
- Spring 2020 Data Structures and Analysis (**Java**) | System Fundamentals (**C**)