Houlton McGuinn

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EDUCATION

University of North Carolina at Chapel Hill — Chapel Hill, NC
Bachelor of Science in Computer Science — *August 2019– May 2023*

SKILLS

Languages: Python, JavaScript, Java, C   **Tools:** Kubernetes, Elasticsearch, React, AWS

EXPERIENCE

Censys — Ann Arbor, MI
Software Engineer Intern — *May 2021 – August 2021*
- Incoming Summer 2021 Software Engineer Intern on Data Pipeline team

Georgia Tech Research Institute — Atlanta, GA
Security Research Intern — *January 2021 – May 2021*
- Developed and executed successful **over-the-air attack** on common IoT camera.
- Implemented private **LTE network** using **srsLTE** to support telemetry analysis of physical phenomena.
- Updated **Kafka** in **Kubernetes** deployment to use TLS encryption for inter-broker and client messaging.
- Reverse engineered **ARM Cortex M-3 firmware** to assist in over-the-air SDR fuzzing and vulnerability discovery.
- Developed and maintained **Gitlab CI pipeline** supporting multi-architecture Docker builds.
- Member of second place team at HackTheMachine 2021 winning **$10,000** in security competition focused on protocol reverse-engineering and exploitation.

University of North Carolina at Chapel Hill — Chapel Hill, NC
Research Assistant — *August 2020 – April 2021*
- Classified company executives by title using **Snorkel, Scikit-learn, and FuzzyWuzzy**.
- Developed concurrent **Python** web-scraping tool using **Selenium** to scrape **11 million** webpages from the SEC's EDGAR database.

Sandia National Laboratories — Livermore, CA
Software R&D Intern — *May 2020 – August 2020*
- Developed microservice in **Python** to support static malware analysis using **Kubernetes and Docker**.
- Integrated 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.**

PROJECTS

Monthly.io 🔗 Spotify monthly playlist recap built using **React, NodeJS, and MongoDB**

SportsSiren 🔗 Notification app for NFL games. **React, NodeJS, MongoDB, and Twilio**

Sdr-Rng 🔗 Random number generator using entropy from software-defined-radio. **Python, Pyrtlsdr**

CourseHub 🔗 Centralized dashboard to show class assignments. **React and AWS Lambda**