

Bennett Kahn

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EDUCATION

Tulane University (Honors)

B.S. in Computer Science and Mathematics (GPA: 3.94/4.0)

Thesis: *Formal Verification of PLC Code Using Coq*

Advised by: *Drs. Marie Dahleh, Nicholas Mattei, Meera Sridhar*

New Orleans, LA

Aug. 2019 – May 2023

EXPERIENCE

Research Intern

June 2022 – Aug. 2022

National Security Agency – Future Computing Summer Internship

Baltimore, MD

- Developed discriminative and generative machine learning (ML) models using Python's PyTorch and Scikit-learn to classify and generate auxiliary arrays for the Reverse Ising Problem
- Used agency supercomputers to conduct ML on large data sets (High-performance computing)
- Built out ML pipeline functionality for research team, using Python's Pandas and NumPy

Cybersecurity Research Assistant

Aug. 2021 – May 2022

UNC Charlotte (NSF-funded REU in Computing)

Metairie, LA

- Coauthored manuscript about the potential use of memory corruption vulnerabilities for hijacking IoT devices; simulated attacks compromising up to 200 IoT devices
- Developed proof-of-concept stack overflow exploits against buffer overflow vulnerabilities in software stacks used in tens of millions of devices
- Contributed to research proposals for topics, such as software verification and software diversity

Computer Science (Python) Tutor

Jan 2021 – May 2021

Juni Learning

Metairie, LA

- Tutored elementary students and encouraged problem solving and conceptual understanding of core computer science concepts

PROJECTS

Software Developer | Press Release Schedule Manager

Jan. 2021 – Present

- Developing Python/Django web app to manage scheduling of a \$1 million public relations budget for local law firm
- Using machine learning to optimize schedule, given 20-30 timing/budget constraints

Software Developer | Court Watch Nola Data Dashboard

Jan. 2022 – Aug. 2022

- Developed data dashboard for local .org (Court Watch Nola), enabling quick analysis of their roughly 460k existing data entries
- Used Django and HTML/CSS for dashboard; SQL for database

Data Scientist | Orleans Court and Police Data Analysis

Aug. 2021 – Dec. 2021

- Used an AWS EC2 instance to scrape 100,000 publicly available court dockets
- Analyzed collected data with Python to discover biases in the Orleans Parish court systems, such as 4-5x higher bonds for certain minority groups, comparatively

Software Developer | Club Website Backend Development

June 2022 – Aug. 2022

- Modified existing website to include login, account, and automatic attendance tracking functionality for the 300+ members of Cookies & Code (Tulane's computer science club)
- Used Python and AWS S2 to integrate club Google Drive with website database

TECHNICAL SKILLS

Languages: Python, C, C++, Java, JavaScript, HTML/CSS, OCaml, Coq, MiniZinc, Shell

Tools: Git/Hub; Docker; Heroku; AWS EC2, S3; SQL; Django; Pandas; NumPy; PyTorch; Scikit-learn; Ropper

General: Machine learning, High-performance computing, cybersecurity, exploit development, agile development

RELEVANT ACTIVITIES

Cookies & Code: *President*, Fall 2022 - Present; *VP*, Fall 2021 - Spring 2022; *Executive Board*, Fall 2019 - Spring 2020

Tulane Math Club: *Vice President*, Fall 2021 - Spring 2022; *Executive Board*, Spring 2020 - Spring 2021