

Shrikar Vasisht

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EDUCATION

University of Maryland, College Park

Expected Graduation - May 2024

B.S. in Computer Science and Applied Mathematics, Advanced Cybersecurity Experience for Students (ACES) Minor

Relevant Coursework: Operating Systems, Real Analysis, Algorithm Analysis and Design, Advanced Compilers, Abstract Algebra, Graph Theory, Computer Security, Data Structures, Programming Languages, Python Web Development, Linear Algebra, Multivariable Calculus, Number Theory, Probability Theory

EXPERIENCE

Product Security Engineering Intern, Cisco

June 2023 - August 2023

- Worked on the security team for the Duo 2-factor authentication service, which has more than 100,000 users worldwide.
- Designed and implemented a fuzzing harness and fuzzer from scratch in Python and C++ for the jsoncpp C++ library; used the fuzzer to find possible bugs in the Duo Windows Logon software.

Security Engineering Intern, Leidos

June 2022 - August 2022

- Utilized the BERT natural language processing (NLP) model along with the Pandas and Numpy Python libraries to develop a system that categorizes zero-day exploits based on the Common Vulnerabilities and Exposures (CVE) catalog of previous vulnerabilities and patches
- Extracted a variety of data points from the CVE descriptions with the Spacy library and visualized the relations between different CVEs using TypeDB

Research Intern, University of Maryland Breakerspace Lab

June 2021 - May 2022

- Worked under Dr. Dave Levin on vPing, a system to gather data about VPNs and their users by using network protocols to identify and geolocate the clients.
- Developed an implementation of the MQTT network protocol using the Python Sockets library to run on Bento, a modified version of the Tor browser.

Research Intern, University of Maryland

May 2019 - December 2020

- Implemented a machine learning algorithm in Python for the game Nim With Cash using reinforcement learning techniques under Dr. Bill Gasarch.
- Identified parameters that lead the ML engine to perform better against a strategy game like 'NIM with cash'.
- Implemented the Linear Congruential Generator random number generation algorithm in Python and cracked it based on encrypted text.

STIC Student Facilitator, University of Maryland

August 2022 - June 2023

- Organize and co-teach a student-led course on Web Development w/ Python and Flask
- Help design coding projects and quizzes for students, and assist in office hours when needed

Teaching Assistant, UMD Smith School of Business

September 2021 - December 2021

- TAed for a web application development class (BMGT406) for business and information systems students
- Helped students with coding projects using HTML, CSS, Javascript, and SQL

Secretary, UMD Cybersecurity Club

May 2021 - May 2022

- Ran the club social media accounts (Instagram, Twitter) and created graphics to advertise weekly meetings and other events
- Wrote and tested CTF challenges for UMDCTF 2021 and 2022 relating to cryptography and forensics

PERSONAL PROJECTS

Sanskrit Pronunciation Helper, Python

December 2022 - Present

- Developing a Flask app where users can record themselves reading sentences in Sanskrit and compare to the correct pronunciation
- Uses the algorithms included in the Librosa library to compare audio files and generate a similarity score

Hebi, Python

Spring 2021 - Winter 2021

- Python tool to easily access and manipulate data about anime series and films from an already existing database
- Uses JSON manipulation libraries to extract different data points based on user requests

COMPUTER AND PROGRAMMING SKILLS

Programming Languages: Python, Java, C, Rust, C++, OCaml, Ruby, Racket, x86, HTML/CSS, SQL/Database Management, Coq

Concepts: Cryptography, Cyber Forensics, Data Structures, Multithreading, Software and Web Security, Fuzzing

Software: GDB, Git, MATLAB, Microsoft Office, Google Suite, Vim, LaTeX

Tools and Libraries: Flask, Jinja2, Pandas, Numpy, Linux/Unix, Wireshark