Nathaniel Simmons

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Education

University of Texas at Dallas Richardson, TX

M.S. Computer Science NSF CyberCorps®: Scholarship for Service - GPA: 3.85 August 2023 - Present

- Cybersecurity Concentration Track Expected Grad May 2025
- Coursework: Systems Security, Language-Based Security, Information Security, Protocol Verification

B.S. Computer Science Cum Laude - GPA: 3.83 August 2019 - May 2023

- Dean's list recipient, Academic Excellence Scholarship Recipient
- Coursework: Operating Systems, Functional Programming, Automata Theory, Machine Learning, AI

CompTIA Security+ Certification April 2024

Google Cybersecurity Certificate September 2024

Skills

Cybersecurity: Reverse engineering, Exploit development, Network analysis, Formal verification, Protocol analysis, Cryptography, Web application security, Secure coding, Forensics

Tools: PWNTools, Ghidra, IDA, gdb, WireShark, Burp Suite, Nmap, CAN Bus, UART, VMs, REMnux, Kali

Languages: Python, C/C++, Java, Bash, x86 Assembly, Coq, SQL, HTML, CSS, PHP, Powershell

Experience

Lawrence Livermore National Laboratory - Cybersecurity Graduate Intern May 2024 - August 2024

- Reverse engineered programmable logic controller in a team environment using BinSync to enhance security
- Successfully identified vulnerability for PLC and built PoC for demonstrating vulnerability's impact
- Performed static and dynamic program analysis using REMnux on a separated VM network to detect vulnerabilities
- Presented comprehensive findings to a group of 80, including key decision-makers, to inform future initiatives

UTD Software and Systems Security Laboratory - Cybersecurity Researcher January 2024 - May 2024

- Integrated a vulnerability scanning application into drone simulation software, proving implementation capabilities
- Utilized multiple data points from the scan to initiate a vulnerability test, identifying potential threats

Wyzant - Private Java Tutor December 2020 - July 2023

- Tutored dozens of students in a remote capacity totaling to ~400 hours of instruction
- Formulated lessons and instructed on topics such as algorithms, software design, and API implementation

Projects

Cybersecurity Home Lab Fall 2024

- Designed and implemented a home lab network with a custom-built server, network devices, and security solutions
- Deployed a unified threat management (UTM) appliance, Intrusion Prevention System (IPS), Virtual Local Area Networks (VLANs), and a Honeypot for enhanced network security
- Implemented and monitored Security Information and Event Management (SIEM) Wazuh for threat detection

Bluetooth Android Application Spring 2023

- Designed and developed a multi-threaded back end in Java/XML for tracking student attendance in the classroom
- Mentored and led a team of five developers, resulting in a MVP application release and subsequent implementation

Distributed Mutual Exclusion Implementation Fall 2023

- Programmed a distributed system of nodes that communicate using TCP sockets in Java and Bash
- Implemented Roucairol and Carvalho's resource mutual exclusion algorithm with vector clocks

Activities

UTD CTF team – Top 11% USA
Toyota Hackfesta CTF
Dice CTF
Deadface CTF
Cake CTF
DEFCON 2024
PWN College
TryHackMe
Eagle Scout