Justin Vita

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Objective: A full-time employment in any of the following areas: Operating Systems, Networking, and Cybersecurity

EDUCATION

VIRGINIA TECH

MEng | May 2023
Computer Science
Computer Security Focus
GPA: 3.95

BS | May 2022
Computer Science
Cybersecurity Minor
Graduated with Cum Laude
GPA: 3.56

COURSEWORK

CURRENT

Advanced Parallel Computation
System and Software Security

PREVIOUS YEARS

Data Structures & Algorithms
Operating Systems
Compiler Optimizations
Software Reverse Engineering
Cryptography
Docker Containerization
Network Arch & Protocols
Network Security
Multiprocessor Programming

SKILLS

Experienced
C • Java • Python • C++

Familiar
Assembly • LLVM • C#
NoSQL (MongoDB)
Bash • Rust • Docker

TOOLS

Git • Linux • CMake
Ghidra • x32Dbg • Wireshark
Virtual Machines • gdb
valgrind

WORK EXPERIENCE

SOFTWARE DEVELOPER INTERN | BlackHorse Solutions
May 2022 - August 2022
- Independently wrote a cross-platform remote payload loader in C for the company's cyber kill chain and testing pipeline, saving hundreds of man-hours debugging
- Developed corresponding shell code and static binary payloads of the remote payload loader
- Created a Python Webserver using Flask to communicate with the remote payload loader in HTTP

SOFTWARE DEVELOPER INTERN | Sonalysts, Inc.
June 2021 - August 2021
- Documented an application layer protocol used in many DoD machines for a new GIS system
- Researched web libraries to allow hundreds of GIS systems to communicate in real-time

UNDERGRADUATE TEACHING ASSISTANT | Operating Systems
January 2021 - May 2022
- Advised 250 students on the debugging of their code for projects using tools like gdb and valgrind
- Engaged with students one-on-one to teach and reinforce concepts in multi-threading, memory allocation, operating systems, and webservers

RESEARCH

DNSSEC DOWNGRADE ATTACKS | Network Security
August 2022 - December 2022
- Recreated a recently published vulnerability in 2022 which causes DNSSEC to be dropped due to unknown RRSIG numbers
- Documented the existence of this vulnerability in multiple public DNS resolvers

LOCK-FREE THREADPOOLS | Multiprocessor Programming
November 2022 - December 2022
- Incorporated lock-free dequeues in C for the use in a fork-join threadpool API that programmers can use to implement multithreading in their programs
- Analyzed and compared the performance to coarse/fine-grained implementations using mergesort and fibonacci tests

DEEP FAKE DISRUPTION | Secure Computing Capstone
August 2021 - December 2021
- Prototyped a solution that modifies videos to disrupt the training of the DeepFaceLab learning model
- Wrote a research paper on how peturbing a person's facial landmarks can change the labeling of facial regions within DeepFaceLab

PROJECTS AND AWARDS

WINNER AT VT HACKS 9 (MOST POLISHED HACK) | SincerelyMe
February 2022
- Created a full stack app in 72 hours that creates personalized websites given a user's social media
- Used React, MongoDB, and PyTorch to show interesting posts from a user's social media

WINNER AT VT HACKS 8 (BEST OVERALL HACK) | BananaSplit
February 2021
- Collaborated with two teammates to create a full stack app in 72 hours to simplify splitting purchases
- Learned and used MongoDB for the first time to store purchase and user data between sessions

LEADERSHIP ACTIVITIES

EVENTS COORDINATOR | Japanese Cultural Association (JCA)
June 2020 - April 2021
- Coordinated and led 10+ events to spread Japanese Culture to the Blacksburg community