Chase Kanipe

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University of Maryland - Bachelor of Science (2022)
Computer Science Major, ACES (cybersecurity honors college) Minor, Physics Minor

Interests - Reverse engineering, malware analysis, symbolic execution, binary exploitation, hardware reversing

Experience

Mantech Cooperation — Co-op

May 2020 - August 2020

Completed a summer internship involving vulnerability research. ManTech empowers networks and personnel with solutions and training that mitigate cyber attacks.

Correct Computation — Developer

September 2019 - May 2020

Worked on binary analysis tools that generate C-like models of memory flow to statically detect vulnerabilities related to memory allocation in shared object files.

Joint Quantum Institute — Research Assistant

May 2019 - January 2020

Programmed ARTIQ (advanced real-time infrastructure for quantum physics) systems to interface with quantum computing experiments.

UMD Autonomous Unmanned Systems Lab — Research Assistant

June 2018 - August 2018

Developed and analyzed small robotics systems as part of a research lab at the University of Maryland. Worked with other undergraduates, attended conferences.

Selected Projects

Modality (Symbolic Debugger) — Python

A CLI debugger built on the popular symbolic execution engine Angr. Allows one to simultaneously debug multiple branches of a binaries control flow.

r2bap — Python, C++ , Ocaml

A radare2 plugin that integrates the taint analysis capabilities of CMU's BAP. Amongst other things, it can highlight instructions tainted by user selected registers or mallocs.

Tiny Dissassembler — Python

A CLI disassembler built on capstone. It can find functions and cross references; allows for both linear and recursive disassembly.

Network Scanner — Python

A nmap-like network scanner written in python. Will detect hosts, open ports, and contains basic service fingerprinting

ARTIQ SU-Servo Controller — Python

Intensity stabilization system developed for ARTIQ (advanced real-time infrastructure for quantum physics) for use in trapped ion quantum computing experiments

Skills

Programming (Fluent)

C, Python, Java, Racket

Programming (Proficient)

x86, OCaml, Rust, Ruby, HTML, Angular

Static Analysis

Radare2, Ghidra, Capstone

Dynamic Analysis

Radare2, GDB-PEDA, x64dbg

Penetration Testing

Nmap, Wireshark, Burp Suite, Metasploit

Symbolic Execution

Angr

Fuzzing

AFL, Python

Static Analysis

BAP

Forensics

Volatility, Binwalk, Others

Graphics

UE4, Blender 3D, Maya, Blender, GIMP

Other

Github, Lock Picking

Coursework

408E - Reverse Engineering
408T - Penetration Testing
408L - Digital Forensics
430 - Compilers
414 - Network Security
430 - Compilers