Matthew Rogers
matthew.rogers2197@gmail.com

Education

The University of Oxford (2018 – Present) — Expected Graduation Date: Apr 2022
Course: DPhil in Cyber Security

Auburn University, 2015 – Present — GPA: 4.0
Major: Software Engineering — University Honors Scholar

Employment

Shift5 Inc, April 2019 – September 2019

First Engineer hired at Shift5
Developed J1939 parsing capabilities, ELK visualizations, and a rules-based intrusion detection system capable of detecting rogue devices on J1939 systems

Defense Digital Service, May – August 2018

Developed Malware with Worm Capabilities for a penetration test of government networks.
Areas of Development include: Vulnerability Research, Binary Exploitation, Command and Control Infrastructure Development, and Powershell scripting

Dynetics, 2014 - 2016:

May -July 2016: Developed a tool which will take an unknown binary and using a custom fingerprinting software identify the name and version of the binary independent of the architecture or compiler that was used to build it. It then utilizes a custom SQLite3 Database of NIST CVEs to identify vulnerabilities. This tool was designed to be the first tool of many to automate vulnerability scanning and exploitation.

May -July 2015: Worked in a team of two to develop a Malware Analysis tool that utilizes function level fuzzy hashes to attribute unknown malware to known malware actors and identify functionality. This work was presented at four security conferences.
Source: https://github.com/dynetics/malfunction

May -July 2014: Worked in a team of four to reverse engineer foreign malware attempting to exfiltrate sensitive data across a network. This involved extensive refactoring and commenting of decompiled code to make it readable for future work. The team also created a command and control server to simulate the malware and document its functionality

Awards

Rhodes Scholar (2018)
Department of the Army: Achievement Medal for Civilian Service (2018)
Marshall Scholarship Finalist (2018)
Auburn University College of Engineering Graduation Marshal
Cybercorps: Scholarship for Service (2017-2018) – Merit based scholarship for studying cyber security
Barry Goldwater Scholarship Auburn University Nominee (2017)–One of four selected for nomination
Black Hat Student Scholarship (2016) -- Merit based scholarship dependent on research relating to Black Hat
GhostRed CTF (Fall 2016) --Second Place
CyberPatriot VII (Spring 2015) –National Champion (2185 Teams)
CyberPatriot VI (Spring 2014) --National Runner Up (~1500 Teams)

Organizations

Cofounder of the Auburn Ethical Hacking Club (2015 – 2018)
Auburn Honors College Ambassador
Auburn Undergraduate Research Ambassador
CyberPatriot Volunteer Mentor (2016)

Speaking Engagements

Preparing EMS Superiority Panel

Electronic Sheepdogs: Teaching the Hacker's Mindset to Everyone*
Matthew Rogers, James Brahm
Association of Old Crows 55th Symposium, November 2018

Getting Newcomers into Infosec: The Tribulations of the Auburn University Hacking Club*
Matthew Rogers
ShowMeCon STL, June 2018

Malfunction's Functions: Automated Static Malware Analysis Using Function Level Signatures*
Matthew Rogers, Jeramy Lochner
DerbyConV, September 2015

Malfunction's Functions: Static Malware Analysis of Function Level Signatures
Matthew Rogers
EC-Council TakeDownCon Rocket City, July 2015

Automated Static Malware Analysis Using Function level Signatures: or How I Learned to Stop Worrying and Love the APT*
Matthew Rogers, James Brahm, Morgan Wagner
ShowMeCon STL, June 2015

So Easy A High Schooler Could Do It: Static malware analysis using function level signatures*
Matthew Rogers, James Brahm, Morgan Wagner
Bsides HSV, February 2015

Developing the future Cyber workforce –A Collaborative Approach
Dr. Casey Wardynski, Matthew Rogers, James Brahm
Space and Missile Defense Symposium, August 2014

Developing Future Electromagnetic Spectrum Operations Warriors
Dr. Casey Wardynski, Matthew Rogers, James Brahm
Association of Old Crows 50th Symposium, October 2013

Publications

Detecting CAN Attacks with J1939 Specification Powered State-based Rules
Matthew Rogers, Kasper Rasmussen, Jassim Happa
Under Review – Jan 2020

Internal Report at Dynetics
"Reverse Engineering and Reimplementation of APT Malware", James Brahm, Matthew Rogers, Cailin Simpson

* Recording Available on YouTube