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**Ryan Mower**

**OBJECTIVE:**

A master’s computer science student seeking an opportunity to test applications for vulnerabilities, develop exploits for discovered vulnerabilities, and help improve overall system security.

**EDUCATION:**

College

* University of Minnesota, Twin-Cities, College of Science and Engineering 2019-2023
* Bachelor | Master of Science in Computer Science
* North Dakota State University 2018-2019
* GPA: 4.00

Coursework

Computer Networks I, II, III

Advanced Programing

Secure Software Systems I, II, III

Parallel/Distributed Computing

2020-2023

* Operating Systems I, II
* Machine Architecture

**ACCOMPLISHMENTS:**

* First author on *Graphics Card Based Fuzzing* – IEEE Computer Society
* Dean’s List 2019-2023

**TECHNICAL SKILLS AND COMPUTER SCIENCE KNOWLEDGE:**

* BurpSuite, Ghidra, AFL Fuzzer, Metasploit, Nmap, LLVM
* C/C++, Java, Python, SQL, Git, Docker JavaScript
* Linux, Windows, Macintosh, 5G Network, VIM
* Microsoft Office, Google Suite, PwnTools

**WORK EXPERIENCE:**

**Network and Security Research Assistant** 2022-2023

* Compiled 5G network infrastructure with CFI enabled via the LLVM framework
* Reverse engineered IoT devices, fuzzed 5G network protocols and discovered vulnerabilities
* Captured and sanitized egress data from IoT devices with fake information to the cloud

**Optum Software Security Engineer** Summers of 2021-2022

* Developed web portal, performed agile development with DevSecOps
* Interacted with: REST API’s, LDAP, MySQL, Kubernetes, Docker, Express, React
* Scanned applications with Fortify, pentested web portal, fixed vulnerabilities
* Collaborated with teammates and peers, practiced daily scrums, presented project

**Research Experience for Undergraduates in Cybersecurity** Summer of 2019

* Researched fuzzing techniques and how to incorporate parallel computing for GPU
* Wrote parallel computing code for GPU, published technical paper, analyzed data

**INDEPENDENT WORK:**

**Developed Minecraft Mods** Summer of 2022 - Present

* Reverse-engineered Minecraft, developed fly hack via a TCP proxy

**Actively Compete in Hack the Box** 2020-Present

* Pentest boxes using Nmap, Gobuster, Metasploit, BurpSuite, Hashcat, and other tools

**Command and Control Server**  Summer of 2021

* Developed C&C server to control a botnet using socket programming in Python

**Python Ethical Hacking Course** 2019 - 2020

* Created ARP spoofer, ARP spoof detector, DNS spoofer, MAC changer
* Network sniffer, scanner and cutter, keylogger, download replacer, code injector

2019 - 2023

2018 - 2019

**INVOLVEMENT:**

* UMNTC Association for Computing Machinery
* UMNTC Intramural Soccer
* UMNTC Club Alpine Ski Team (Vice President)
* NDSU Cyber Security Student Association
* NDSU Men’s Club Soccer Team