

Home Address
LaGrangeville, NY 12540

ERIN FRECK

enfreck@gmail.com | 845-797-3997

School Address,
Blacksburg, VA 24061

SUMMARY

Dedicated graduate student in Computer Science focusing in cybersecurity and conducting research in fuzzing. Passionate about offensive cyber with both blue team and red team experience. Seeking challenging internship opportunities that specialize in offensive non-kinetics or vulnerability research.

EDUCATION

Virginia Tech, Blacksburg, VA – M.S. Computer Science, Graduate Certificate in Cybersecurity Expected DECEMBER 2024

Cumulative GPA: 4.00/4.00 Thesis: Processor Fuzzing

Relevant Classes: *Operating Systems, Fundamentals of Information Security*

Virginia Tech, Blacksburg, VA – B.S. Computer Engineering, Minors in Computer Science and Cybersecurity MAY 2023

Cumulative GPA: 3.95/4.00 In Major GPA: 3.98/4.00

Relevant Classes: *Software Reverse Engineering, Principles of Computer Security, Computer Networking, Cryptography, embeddedCTF, ML, AI*

WORK EXPERIENCE

MITRE, Bedford, MA – Graduate Intern on Cyber Threat Intelligence and Adversary Emulation MAY 2023 - AUGUST 2023

- Developed malware to be used in round two of MITRE ATT&CK Evaluations Managed Services
- Implemented persistence and user configurable capabilities for a Linux backdoor, modified a custom C2 framework by adding a handler to communicate with the implant, and analyzed the creation of custom ethernet packets in Go utilizing Wireshark
- Observed the red team during a cyber exercise which evaluated deception technologies

Google, Remote - SWE Intern on Google Cloud Event Threat Detection MAY 2022 - AUGUST 2022

- Built two customer-configurable detection modules using Java to identify IAM-based privilege escalation attacks, processing tens of millions of customer logs and petabytes of data per second
- Collaborated with a UX team to design a UI for customers to use the two custom modules
- Helped build a system using C++, C, and Go to allow security engineers to run YARA-L and SQL rules against GCP logs in real time

Google, Remote - STEP Intern on Google Ads Open Measurement MAY 2021 - AUGUST 2021

- Worked on the Cross Media Measurement team to measure ad views across media platforms to provide users with more diverse ads and advertising companies with more accurate data
- Designed and tested a library in C++ and Bazel for encrypting identifier-payload pairs as needed for a Panel Match Batch Lookup Workflow to be scaled to billions of users through Apache Beam pipelines
- Wrote design documents on the implementation of encryption methods such as Deterministic Commutative Encryption, AES, HKDF, and SHA256
- Utilized Git and GitHub to effectively collaborate with engineers at Google, Facebook, and Amazon

RESEARCH EXPERIENCE

FORTE Lab, Blacksburg, VA - Graduate Research Advisor AUGUST 2023 - PRESENT

- Conducting fuzzing research, specifically focusing on fuzzing processors

IT Security Lab, Blacksburg, VA - Graduate Research Advisor SEPTEMBER 2021 - PRESENT

- Writing policies and procedures to help Virginia Tech increase security from CIS Group 1 to CIS Group 2
- Undergrad Research ('21-'23): Developed a website using JavaScript and HTML to identify the best data storage options for user's needs

BOLT Electric Motorcycle, Blacksburg, VA - Controls Subteam OCTOBER 2019 - MAY 2023

- Controls Lead ('22-'23): Led the team on a data collection project utilizing CAN, rotary encoders (wheel speed), linear potentiometers (suspension travel), rotary potentiometer (throttle), tire temperature sensors and an inertial measurement unit
- SEC Representative ('21-'22): Attended SEC meetings and events in order to get funding for our team
- Developed a PCB for signals management using Altium Designer, created several wiring harnesses from scratch, aided in high voltage work, worked on aux pack testing, and wrote code for an IMU, wheel speed sensors, and position sensors

LEADERSHIP EXPERIENCE

Cybersecurity Club, Blacksburg, VA - Treasurer AUGUST 2022 – PRESENT

- Treasurer ('23-'24): Organized finances, created the club's corporate sponsor package, and developed a network of industry contacts

Society of Women Engineers, Blacksburg, VA - President AUGUST 2019 - PRESENT

- President ('22-'23): Oversaw the section, communicated with company representatives to secure sponsorships, and support the officer board in organizing events and piloting new ideas
- Treasurer ('21-'22): Managed SWE finances and worked closely with the board members to allocate money and reimbursements
- EWI Chair ('20-'21): Organized SWE's annual networking event, invited company sponsors, advertised to student, and handled finances

Home Address
LaGrangeville, NY 12540

ERIN FRECK

enfreck@gmail.com | 845-797-3997

School Address,
Blacksburg, VA 24061

LEADERSHIP EXPERIENCE (CONTINUED)

Galipatia LLC, Blacksburg, VA - Data Committee Liaison

AUGUST 2019 - MAY 2022

- Data Committee Liaison ('21-'22): Led and organized committee meetings, and developed and maintained the EMS
- Studio Training Committee Member ('20-'21): Trained individuals within the living learning committee on soldering
- Mentor ('20-'21): Mentored 5 freshmen in study skills, college life and activities, and opportunities within the industry

HONORS/AWARDS

Phi Beta Kappa, Member

MAY 2023 - PRESENT

- Invited to join the Nation's Original Honor Society based on academic engagement, intellectual curiosity, and leadership capacity

Tau Beta Pi, Member

DECEMBER 2020- PRESENT

- Invited to apply to the National Engineering Honor Society based on academic achievement, personal integrity, breadth of interest, leadership potential, and service to others

Eta Kappa Nu, Member

SEPTEMBER - PRESENT

- Invited to join the IEEE Honor Society based on academic ranking, character, and attitude

Torgersen Leadership Scholarship, Recipient

FEBRUARY 2022

- Established in honor of the Centennial Anniversary of the College of Engineering and to honor Dr. Paul E. Torgersen, former dean of the College of Engineering and ultimately former president of Virginia Tech.
- Awarded annually to 2 rising seniors who have portrayed outstanding leadership and academic achievements.

Rising SWE Leader Award, Recipient

SEPTEMBER 2019

- Awarded to freshmen STEM students who are interested in joining SWE long-term and share a passion for leadership and expanding the diversity potential in the field of engineering.

ACTIVITIES

Fencing Club, Sabre

AUGUST 2022 - CURRENT

UKIRK - Church Ministry, Member

AUGUST 2019 - CURRENT

Music Classes, Violist

AUGUST 2019 - MAY 2022

Intramural Sports, Member

VARIOUS SEMESTERS

SKILLS

Java, C/C++, Rust, Ghidra, Git, Verilog, Data Structures, Algorithms, Altium Designer, Soldering, Embedded Systems, Python, Wireshark

LINKEDIN



<https://www.linkedin.com/in/erin-freck/>

WEBSITE



<https://enfreck.github.io/>