# EDMUND LAWERH AMANOR

Portfolio Website | linkedin/eamanor8 | github.com/eamanor8 | eamanor8@vt.edu | 540.998.2008

## EDUCATION

**Computer Science, Ph.D** , Virginia Tech (**GPA: 3.96/4.0**) AUGUST 2023 - PRESENT

**BSc. Computer Engineering**, Kwame Nkrumah University of Science & Technology NOVEMBER 2021

## SKILLS

| | |
|---|---|
| **Programming & Scripting** | Python, MATLAB, JavaScript, SQL, C/C++, Bash |
| **Web & Markup Languages** | HTML, CSS, LaTeX |
| **Databases** | MySQL, MongoDB |
| **Frameworks & Tools** | PyTorch, Git, Packet Tracer, AWS |
| **Cybersecurity Tools** | Metasploitable, Burp Suite, Wireshark |

## CERTIFICATIONS

- Cryptography I
- Cyber Security: White-Hat Ethical Hacking
- AWS Cloud Foundations
- Google IT Support Professional Certificate

## PROJECTS

**Privacy Policy Summary Tool (PPST)** MAY 2025

- Designed and implemented a full-stack tool that extracts and summarizes key information from privacy policies (data collected, usage, sharing) using the *OpenAI API*.
- Built with FastAPI (backend) and React + TailwindCSS (frontend); deployed via Render and Netlify.
- Implemented a risk flagging system to highlight sensitive terms (e.g., biometric data, tracking, third-party sharing).
- Enabled flexible input (URL, text, or PDF) with automated parsing using *newspaper3k* and *PyMuPDF*.

**Cross-Site Scripting (XSS) Attack** APRIL 2024

- Exploited Cross-Site Scripting (XSS) vulnerabilities in the Elgg social networking platform to simulate real-world attack scenarios.
- Developed JavaScript-based attacks to steal session cookies, modify user profiles, and forge HTTP requests.
- Implemented a self-propagating XSS worm, demonstrating how such vulnerabilities can rapidly spread across user profiles.
- Analyzed and defeated built-in security countermeasures, including Content Security Policy (CSP) and HTML sanitization.
- Successfully demonstrated the impact of XSS vulnerabilities in web applications, gaining insights into both offensive techniques and defensive strategies.

**Buffer Overflow Vulnerability Exploitation** FEBRUARY 2024

- Explored the buffer overflow vulnerability by simulating attacks on a vulnerable program using SEED Labs' Ubuntu virtual machine.
- Disabled standard security mechanisms such as StackGuard and Address Space Layout Randomization (ASLR) to facilitate the buffer overflow attacks.
- Developed and executed exploit code to gain root privileges by manipulating the vulnerable program's memory layout.
- Implemented shellcode to trigger the vulnerability, overcoming countermeasures like non-executable stacks and dash shell protections.
- Successfully demonstrated the exploitation of buffer overflow vulnerabilities, providing hands-on experience in system security and countermeasure evasion techniques.

**Integrated Enterprise Wi-Fi Management System**, KNUST Capstone Project JANUARY 2021 - SEPTEMBER 2021

- Built a web application for enterprise wi-fi management.
- Developed the UI using Google's Material UI and ReactJS libraries.
- Implemented the solution using a FreeRADIUS server interfacing with a NodeJS and MySQL backends running in a Linux environment.
- Provisioned for directory services such as active directory and OpenLDAP.

## WORK EXPERIENCE

**Graduate Teaching Assistant**, Virginia Tech FALL 2023 - SPRING 2025

- Assisted faculty in teaching undergraduate courses (Computer Organization, Database Management Sytems).
- Held office hours, clarified concepts, graded assignments/exams, and provided feedback on course projects.

**Teaching Assistant & Lab Support**, KNUST OCTOBER 2021 - SEPTEMBER 2022

- Set up and configured 30+ Windows computers and standardized lab software, supporting practical coursework for 200+ students each semester.
- Provided ongoing technical support and troubleshooting, resolving 10+ weekly hardware/software issues and maintaining a 95% user satisfaction rate.
- Ensured seamless lab operations by monitoring systems, managing user profiles, and guiding students and faculty on IT issues.

**Network Engineer Intern**, Vodafone Ghana JUNE 2019 - AUGUST 2019

- Worked with Enterprise Network Operations Center, which was responsible for service provision for enterprise customers.
- Responsible for creating Cacti graphs and monitoring the usage trends on customer links.
- Proactively monitored customer links to see why they were experiencing downtime and latency in their network. Occasionally I checked if they were getting the appropriate bandwidth allocation.
- Contributed to the efficiency and quality of service delivered to the enterprise customers.

## VOLUNTEERING EXPERIENCE

**Prospective Grad Student Recruitment Volunteer**, Virginia Tech MARCH 2025

- Welcomed and engaged with prospective computer science graduate students, providing information and support during the recruitment weekend.

**ADA/Accessibility Marshal**, Virginia Tech Commencement Ceremony MAY 2024

- Provided guidance and support to individuals requiring accessible seating, particularly those with mobility challenges.
- I ensured that all guests, regardless of their physical abilities, had a smooth and enjoyable experience by offering directions and assistance with seating arrangements.
- This role allowed me to contribute to an inclusive and welcoming environment for everyone attending the ceremony.

**Certified HCIA Instructor**, Huawei ICT Academy, KNUST FEBRUARY 2022 - MAY 2023

- Taught students routing and switching principles, basic WLAN principles, and network security basics.
- Assisted students in understanding how to use Huawei's network simulation environment (eNSP).
- Used eNSP to demonstrate the operations and processes underlying various network protocols.

## AWARDS & HONORS

**GNPC Scholar** (GNPC Foundation Scholarship), KNUST 2017 - 2021

**Outstanding Prize** (Sub-Saharan Africa Regional ICT Competition), Huawei Ghana 2020

**Runner Up** (National ICT Competition), Huawei Ghana 2019

## PROFESSIONAL ASSOCIATIONS

**National Society of Black Engineers** (NSBE) Member

**Black in AI** (BAI) Member