

SAMUEL SELASI KPORVIE

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Summary

Cybersecurity-focused Software Engineer with an MSc in Computer Science and hands-on experience in backend development, applied cryptography, and security tooling. Recently certified as a Google Cybersecurity professional and Cisco Cybersecurity Defense Analyst, with practical labs in threat detection, network security, and vulnerability assessment. Published open-source security tools on PyPI and conducted encryption research with real-world forensic applications.

Education

- ❖ University of Ghana, Legon | *September 2025*
MSc. Computer Science (*Distinction*)
Thesis: Securing Third-Party Data in Forensic Investigations Using Homomorphic Encryption
- ❖ University of Ghana, Legon | *October 2020*
BSc. Biomedical Engineering (*Second Class Honours*)
Project: Machine Learning-Based Drug Inhibitor Prediction

Certifications

- ❖ **Cybersecurity Defense Analyst** – Cisco Networking Academy, Online | *June 2026*
Network monitoring, intrusion detection, threat analysis, incident response.
- ❖ **Google Cybersecurity** – Coursera, Online | *May 2026*
Linux, Python automation, SIEM tools, network security, risk management.
- ❖ **OCI Certified Data Science Professional** (*Valid till November 2027*) – Oracle University, Oracle Africa Region | *November 2025*
- ❖ **Data Science in Precision Medicine and Cloud Computing** – Stanford Medicine, Department of Genetics | *May 2025*
- ❖ **Ethical Hacking: Cryptography (1 CEU/CPE)** – Cybrary, Online | *April 2025*
- ❖ **Software Engineering (Top 5% Backend Graduate)** – African Leadership Experience (ALX), Nairobi | *December 2023*
- ❖ **Systems Engineering & Networking** – IPMC, North Legon | *March 2017*
Courses: CompTIA A+, Computer Hardware.

Technical Skills

- ❖ **Cybersecurity:** Splunk (SIEM), Wireshark, Microsoft Seal, tcpdump, Nmap, Ngrep
- ❖ **Programming Languages:** Python, JavaScript, C, C++, R, SQL, Bash
- ❖ **Data Analysis & Visualization:** PowerBI, Tableau, RStudio
- ❖ **Frameworks:** Flask, Django, FastAPI, React
- ❖ **Databases:** PostgreSQL, MySQL, Oracle, MongoDB
- ❖ **Version Control:** Git, GitHub, GitLab
- ❖ **Container Management:** Docker, Kubernetes
- ❖ **Graphic Design:** Photoshop, Illustrator, Figma, Adobe XD, Draw.io

Experience

- ❖ **Webmaster** - FESF Foundation, Accra | *December 2022 to Present*
 - Maintain and secure the organization's web infrastructure; implemented access controls and monitoring to ensure platform integrity and uptime.
 - Participate in on-call duties to ensure platform stability and quick issue resolution.
- ❖ **Backend Developer** - Ghana-India Kofi Annan Centre for Excellence (GI-KACE), Accra | *August 2020 to September 2022*
 - Developed the backend for an Appraisal Management System using FastAPI and PostgreSQL to streamline appraisal processes.
 - Evaluated, documented, and improved the e-leave and e-invoice applications to support modernization and digital transformation initiatives.
- ❖ **Research Assistant** - West African Centre for Cell Biology of Infectious Pathogens (WACCBIP), Legon | *June to September 2020*
 - Applied homology modeling techniques in a computational biology research project.
 - Performed virtual screening and molecular docking that identified one potential inhibitor for Hepatitis B drug discovery using machine learning approaches.

Projects

- ❖ **Packages on PyPI**, Python
Description: Published 4 open-source Python packages: **StegaBot** (LSB image steganography CLI), **PyScan-Sec** (educational web penetration testing CLI with authorized, proof-based vulnerability scanning), **APIScan** (public API security scanner CLI), and **PyForensicKit** (Linux-based digital forensics command-line toolkit).
Repository: <https://pypi.org/user/samuelselasi/>
- ❖ **Homomorphic Encryption-Based Keyword Search Mechanism (HEKSM)**, C++, Python, PostgreSQL, Microsoft SEAL
Description: Built a privacy preserving keyword search system enabling secure querying of encrypted forensic data.
Repository: github.com/samuelselasi/heksm
- ❖ **In Silico Identification of CYP19A1 Inhibitors**, Python, RDKit, AutoDock Vina, Machine Learning, QSAR, Google Colab
Description: An in-silico pipeline for identifying natural-product inhibitors of the Aromatase (CYP19A1) enzyme using integrated QSAR modelling, machine learning classifiers/regressors, and structure-based molecular docking with AutoDock Vina. Designed a reproducible workflow with automated data processing, fingerprint featurization, model training/prediction, and ranked docking outputs.
Repository: github.com/samuelselasi/aromatase
- ❖ **Custom Linux Shell**, C
Description: Created a lightweight Unix shell supporting command parsing, execution, and essential built-in operations.
Repository: github.com/samuelselasi/simple_shell

References

- ❖ Available upon request.