Stuart Asiimwe

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https://www.linkedin.com/in/stuartasiimwe/ | https://stuartasiimwe7.github.io/

Summary

Machine Learning Engineer with expertise in developing and deploying deep learning models and end-to-end ML pipelines for scientific and industrial applications. Experienced in PyTorch, TensorFlow, CNN-based image analysis, feature engineering, model monitoring, and production deployment with CI/CD and containerised infrastructure.

Education

Hanyang University - Master of Computer Science 03/2023 – 02/2025 | Seoul (SK)
SW Development, Machine Learning & Cybersecurity

Ndejje University - Bachelor of Computer Science 08/2017 – 03/2021 | Kampala (UG)
Graduated top of the class, 1st Class Honors

Skills

Python | **C++** | **JavaScript** | **Node.js with Express** | **React & Next.js** | **Docker** | **GitHub CI/CD** | **Streamlit** | **Transformers** | **Tensorflow** | **PyTorch** | **Reverse Engineering** | **Linux** — Ubuntu & Fedora | **PostgreSQL**

Professional Experience

AI Research Engineer 03/2025 – 09/2025 | Seoul, South Korea
Seoul National University of Science & Technology

- Developed user-friendly desktop GUIs for computer vision pipelines, increasing accessibility for non-technical researchers and achieving adoption across 100% of all collaborating lab teams.
- Built and deployed a microscopy image analysis platform (YOLOv8, Streamlit, PyTorch) automating detection, segmentation, and bacterial growth-phase estimation, reducing manual counting and labeling effort by up to 90%.
- Led development of an end-to-end pipeline for seaweed detection and tracking on large-scale video/image datasets, tripling batch processing throughput and cutting validation time by 50% with automated reporting and QA.
- Pioneered development of a mushroom analysis pipeline with frame extraction, annotation, dual-threshold segmentation, detection and tracking, improving experiment reproducibility and analysis turnaround by 70%.

Machine Learning Researcher 04/2023 – 03/2025 | Seoul, South Korea
Hanyang University

- Conducted firmware and binary reverse engineering (IDA Pro, OllyDbg) to uncover security flaws in embedded systems, achieving a 62% vulnerability detection rate.
- Conducted research on AI-Based Cybersecurity, designing secure model training pipelines and feature engineering strategies for large heterogeneous datasets.
- Designed an algorithm for dynamic feature engineering in ensemble classifiers, boosting threat analysis accuracy and model reliability (xAI) for Windows, IoT, and embedded systems; work was presented at the ICCSS 2024.

Software Engineer (Intern) 04/2019 – 08/2019 | Kampala, Uganda
Strat-Communications Ltd

- Implemented RESTful APIs using Python and Node.js, integrating core modules into CRM systems, improving web app maintainability.
- Debugged backend systems, improving uptime and system reliability.

Publications

International Conference on Convergent and Smart Systems (ICCSS) 07/2024
Proceedings, Page 182-190

A SHAP-Based Dynamic Feature Selection Algorithm in Ensemble Classifiers 02/2025
Master's Thesis - Hanyang University

Deep Learning for Mammogram Analysis (VGG CNN + transfer learning) 11/2020
Capstone project - Ndejje University

Projects

DefectNet
https://github.com/stuartasiimwe7/DefectNet
- A ML-driven system that leverages state-of-the-art deep learning and computer vision models to automatically detect and classify defects in semiconductor wafers, streamlining semiconductor manufacturing inspection.

blackboxml
https://pypi.org/project/blackboxml/
- Developed an open-source Python package that automates logging of Keras training metrics. Managed releases, dependencies, and documentation, demonstrating disciplined software engineering and production-ready ML tooling.

Cloud Security API
https://github.com/stuartasiimwe7/Cloud-Security-Monitoring-API
- Developed a distributed backend service in TypeScript (NestJS) that pulls AWS CloudTrail and IAM logs into PostgreSQL for centralised security auditing. Implemented JWT auth, scheduled ETL pipelines, and modular REST endpoints for log analysis.

Languages

English — Native/Bilingual Proficiency | **Korean** — TOPIK 4 | Conversational/Business Proficiency