

Summary

An MPhil Computer Science Student with experience in software engineering, artificial intelligence, Machine Learning, and HPC. I am driven to advance my skills through graduate studies, particularly in the field of Agentic algorithm design and AI for autonomous robotic systems. An advocate for Ubiquitous AI in Africa.

EDUCATION

Kwame Nkrumah University of Science and Technology

Kumasi, Ghana

MPhil IN COMPUTER SCIENCE

Jan 2025 - Present

- Research Assistant RAIL
- Senior ICT Assistant UITs (KNUST)

Skills

Programming	Python, Bash Scripting, Node.js, GIT, JAVA, JAVASCRIPT, C#,
Artificial Intelligence	TensorFlow, PyTorch , Scikit-learn, NumPy, data analysis(Pandas), Agentic learning(Autogen), Langchain
Document creation	Microsoft Office suite, Zotero, Mendeley, $\LaTeX$ (Overleaf/R Markdown)
DevOps	AWS, Docker, Kubernetes
Back-end	C#.NET, Express, Django, REST API
Front-end	NEXT.js, React.js, HTML5, LESS, SASS
High-Performance Computing (HPC)	OpenHPC, SLURM, OpenMPI/OpenMP, CUDA, Apptainer, PyTorch (Distributed), Warewulf, Parallel Python, Bash Automation, Prometheus, Grafana

Experience

Kwame Nkrumah University of Science and Technology, University Information Technology Services (UITs)

Kumasi, Ghana

SENIOR ICT ASSISTANT

OCT. 2025 - Present

- Contributing to the design and deployment of the university's High-Performance Computing (HPC) platform using OpenHPC to support large-scale research.
- Managing core systems, storage services, and cluster operations to enhance performance, reliability, and data workflows across UITs infrastructure.
- Developing automation scripts and optimisation processes to improve monitoring, resource usage, and researcher access to advanced computing resources.

Kwame Nkrumah University of Science and Technology

Kumasi, Ghana

TEACHING ASSISTANT

Jan. 2024 - Present

- Supported 300+ undergraduate students in introductory programming, data structures, and AI courses.
- Conducted tutorials sessions and, graded, and mentored freshmen to strengthen their foundational computer science skills.
- Developing AI agents to combat phishing attacks from the use of foundational models.

Responsible Artificial Intelligence Lab

Kumasi, Ghana

GRADUATE RESEARCHER

Mar. 2023 - Aug. 2024

- Researched and implemented classification algorithms (SVM, CNN) to enhance accuracy in human activity recognition using AI-driven models for wearable devices.
- Developed AI-powered applications for real-time activity recognition and dataset collection on edge devices, optimizing performance on embedded systems.

Zap Technologies

Kumasi, Ghana

FACILITATOR

Mar. 2021 - Present

- Spearheaded the teaching of web development and programming to university students, fostering a deep understanding of modern web technologies and programming languages.
- Led web development and programming courses for university students, focusing on React.js, Node.js, Express.js, and MongoDB.

KiddieBoo

Kumasi, Ghana

SOFTWARE ENGINEER

Feb. 2017 - Apr. 2020

- Developed and maintained an e-commerce website for children's products, implementing features with HTML, CSS, JavaScript, React.js, and Node.js. Enhanced website visibility and traffic through effective search engine optimization (SEO) strategies.

Presentations

AI4SD Conference

Kumasi, Ghana

PARTICIPANT FOR *Leveraging Artificial Intelligence for Sustainable Development*

Feb. 2026

- Demonstrated the integration of machine learning models with scalable cloud-based infrastructures to develop intelligent, sustainability-driven applications.
- Presented real-world AI solutions that optimized resource utilization and improved operational efficiency by 25%.

(Computer Science Society Seminar (KNUST)

Kumasi, Ghana

GUEST SPEAKER ON *Artificial Intelligence in Web Development*

Mar. 2024

- Introduced machine learning concepts and their applications in web development, including predictive analytics and user personalization.
- Provided hands-on demonstrations of Python frameworks (TensorFlow, Scikit-learn) in web-based AI projects.

Digital Commerce Summit

Kumasi, Ghana

PRESENTER FOR *Building E-commerce Platforms with React and SEO Best Practices*

Nov. 2022

- Shared insights on building e-commerce websites using React.js and Node.js, and improving online visibility through SEO techniques.
- Discussed the impact of optimization strategies that increased website traffic and improved user engagement.

Projects

University Information Technology Services (UITS)

KNUST, Ghana

SENIOR ICT ASSISTANT (HPC SYSTEMS ENGINEER)

Oct. 2025 – Present

- Contributed to the architectural design and deployment of the university's institutional High-Performance Computing (HPC) cluster using the OpenHPC ecosystem to support large-scale scientific and AI workloads across multiple departments.
- Configured and managed heterogeneous compute infrastructure including multi-core CPU nodes and GPU-enabled nodes, integrating CUDA toolchains and optimized numerical libraries (BLAS, LAPACK, FFTW) for high-performance workloads.
- Deployed and optimized the SLURM workload manager for distributed job scheduling, including partition configuration, fair-share policies, and resource allocation tuning for multi-user research environments.
- Implemented distributed software environments supporting MPI (OpenMPI) and OpenMP hybrid parallel programming models for scalable scientific computing applications.
- Automated cluster provisioning and node configuration using Warewulf and Bash scripting, improving reproducibility and reducing system deployment overhead.
- Developed monitoring and performance analysis pipelines using Prometheus and Grafana to track CPU, GPU, memory, and I/O utilization for performance tuning and throughput optimization.
- Integrated containerized research workflows using Apptainer (Singularity) to support reproducible AI and computational science pipelines.
- Currently exploring AI-driven workload prediction models using historical SLURM logs to improve scheduling efficiency and cluster throughput as part of ongoing MPhil research.

ISEE Project (Smart Cane for the Visually Impaired)

Responsible AI Lab (RAIL), Ghana

RESEARCHER ASSISTANT

- Designed and implemented machine learning solutions for a smart cane system to support visually impaired individuals in enhancing independent mobility.
- Advanced ethical, inclusive, and sustainable AI practices in Africa by integrating responsible AI frameworks into assistive technology development.

Leadership Roles

College of Science

KNUST

INTERNATIONAL RELATIONS OFFICER

- Spearheaded initiatives to strengthen international partnerships, coordinating cross-cultural programs that enriched the College of Science's global profile.
- Acted as a primary contact for international students, fostering a diverse and inclusive academic community.

Computer Science Society

KNUST

GENERAL SECRETARY

- Led organizational efforts to enhance student engagement and academic support, managing society communications and event planning.
- Successfully organized technical workshops, networking sessions, and mentorship programs, actively contributing to a collaborative and growth-focused environment for computer science students.

College of Science Parliament

KNUST

STUDENT SENATOR

- Advocated for the academic and social interests of the College of Science within the university's governing parliament.
- Collaborated on policy initiatives that enhanced student resources and academic support systems, amplifying the voice of science students in university-wide decisions.

Confucius Institute

KNUST

STUDENT AMBASSADOR

- Promoted cross-cultural exchange as a Student Ambassador for the Confucius Institute, enhancing awareness and understanding of Chinese language and culture.
- Played a key role in organizing events that strengthened diplomatic ties and provided KNUST students with enriching international perspectives.

REFEREES

KNUST

DR. ABDUL SALAM GADDAFI

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