Michael John Noamesi

300N Washington St. Gettysburg PA
ijohnkojo@gmail.com | GitHub | LinkedIn

EDUCATION

Gettysburg College Gettysburg, PA
Bachelor of Science in Computer Science and Physics *Expected Graduation: May 2028*
Presidential Scholar | GPA: 3.75

RELEVANT COURSEWORK

- Data Structures & Algorithms
- Functional Programming
- Object Oriented Programming
- Machine Learning
- Electronics & Embedded Systems
- Quantum Physics I (MIT OCW)
- Statistics and Probability
- Calculus III
- Intro to Operating Systems

TECHNICAL SKILLS

Languages & Tools: Python, Java, C, C++, SQL, JavaScript, PyROOT, TensorFlow, scikit-learn, React, Node.js, Django, bash, Git, GitHub, Docker.
Platforms: Linux (Ubuntu, Almalinux9), Windows

EXPERIENCE

Fermilab: *Research Intern* *May 2025 – Present*
Compact Muon Solenoid (CMS) Experiment, CERN

- Developed a ROOT/PyROOT analysis pipeline to calibrate & benchmark existing dE/dx (particle track energy loss per unit length) estimators on 130K+ particle tracks from 2018 1800GeV gluino NanoAOD simulation sample for HSCP searches.
- Developed an adaptive Landau-MPV fit estimator using MINUIT's MIGRAD minimizer that converged on 89.6% of the 130K+ tracks; prototype currently reconstructed 1800 GeV gluino mass as secondary peak.

University of Cape Coast| Ghana: *Research Intern* *December 2022 – February 2023*
ML Analysis of Natural Compounds on Acetylcholinesterase (AChE) Enzyme Inhibition.

- Co-developed a TensorFlow/Keras dense neural network (7-person team) to predict AChE inhibition by natural compounds, engineering features such as LogP, H-bond donors/acceptors, MACCS fingerprints, TPSA, and key functional groups.
- Optimized the model via hyperparameter tuning & cross-validation, achieving $R^2 = 0.81$ and 14% lower MSE than baselines; the model flagged curcumin and rosmarinic acid as top inhibitor candidates for Alzheimer's research.

FireFly IO | Ghana: *Instructor | Project Developer* *August 2022 – Present*

- Co-taught weekly Python boot camps for ~40 high-school students (20-instructor team); 90% pushed working capstone projects to GitHub, gaining first-hand version-control and deployment experience.
- Engineered C/C++ firmware for a plasma-speaker demo, linking an ESP32, TPA3255 audio decoder, and Tesla-coil driver to stream MP3s via PWM; added a real-time ring buffer that kept playback smooth and latency low.

SOFTWARE AND ENGINEERING PROJECTS

AgroMesh *Arduino, ESP32, Python, FastAPI, React, Firebase, TensorFlow*

- Co-developing a decentralized AI agritech platform that fuses IoT soil sensors and satellite imagery to deliver real-time crop insights to smallholder farmers–even on low-bandwidth connections.

Treeviz *Python, Graphviz, NetworkX, Textual*

- Building a Python CLI/TUI that safely traverses file systems–handling symlinks and permission traps–then renders interactive, collapsible directory trees via Graphviz, scaling past 100 k entries with depth and regex filters.

NanoGlide *Arduino, C/C++ | Video ref*

- Co-developed and implemented firmware for a ***hand-wearable transmitter control module*** to detect and wirelessly transmit spatial orientation from an MPU-6050 IMU to receiver modules.
- Integrated the MPU-6050 with Arduino and an HC-05 module to stream real-time hand orientation and trigger control signals for precise 3D interaction.

LEADERSHIP AND ON/OFF CAMPUS INVOLVEMENT

Treasurer, Society of Physics Students *August 2025 – Present*

- Elected Treasurer; drafting the club's FY 25–26 budget and setting up a simple ledger to track events and travel spending.

Member, ACM *January 2025 – Present*

- Contributed to 2 on campus collaborative coding projects, and club meetings.

ColorStack Fellow *May 2025 – Present*

- Participate in peer-mentoring and career workshops that support Black & Latinx CS students; expanding network for future hackathons