OGECHUKWU ALLISON KANU

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SUMMARY

MSc researcher specializing in machine learning for wireless/signal data with hands-on experience designing, training, evaluating, and deploying ML pipelines. Proven record training and shipping PyTorch models, migrating/maintaining production-grade codebases, and collaborating across academia and industry (Qoherent Inc., University of Calgary/Benin). Strong software engineering foundation (Python, C/C++, JavaScript), experiment tracking, documentation, and code reviews—plus practical DevOps exposure (Docker, CI/CD scripting). Published at IEEE ICC 2025.

TECHNICAL SKILLS

- **Languages:** Python, C, C++, JavaScript

- **ML/AI:** PyTorch, TensorFlow, Keras, Scikit-learn, FastAI

- **Data:** NumPy, pandas; signal processing (GNU Radio, MATLAB)

- **MLOps/Eng:** Git/GitHub, Docker, CMake; large-scale/distributed training

- **Databases:** MySQL, PostgreSQL, SQLite, MongoDB, Firebase

- **Other:** Embedded systems, academic writing, clear technical communication

EDUCATION

MSc, Electrical & Software Engineering — University of Calgary | Mar 2026

- GPA **4.0/4.0**; Thesis (tentative): *Self-Supervised Radio Representation Learning for Multi-task Applications*

- Coursework: Data Mining & ML; Advanced Networking (6G & Beyond); Wireless Transceiver System Design.

BEng, Electrical & Electronic Engineering — University of Benin | Dec 2019

- GPA **4.72/5.0**; Thesis: *Harmonic analysis: comparison between Elson & BlueGate 2kVA inverters*

- Coursework: Telecommunication Principles I & II, Digital Communication, Microwave Engineering, Electromagnetism, Signals and System, Electronic Device & Circuits, Logic Design & Digital Circuits.

EXPERIENCE

Mitacs Research Intern — Qoherent Inc., Toronto, ON | Jan 2024 – Dec 2024

- Designed, trained, tested, and iterated **I/Q→spectrogram forecasting** and **signal localization/classification** models (narrow & wideband).

- **Collaborated with team to refactor training stack** from **FastAI** to **PyTorch**, writing clean, well-documented modules and utilities; improved maintainability and reviewability.

- Built **self-supervised multi-task** learning pipeline that produced an **IEEE ICC 2025** publication.

- Collaborated with team; tracked experiments and communicated results to drive decisions.

- Troubleshot performance/accuracy issues and optimized training/evaluation throughput.

Graduate Research Assistant — University of Calgary | Jan 2024 – Present

- Researching **mixed pretraining** for self-supervised learning on **I/Q samples** for **multi-task** downstreams.

- Implemented scalable training/evaluation loops and ablations; maintained artifacts and documentation for reproducibility.

Software Engineer Intern — ALX Africa (IT Dept.) | Jan 2023 – Dec 2023

- Built small-to-medium projects in **C, Python, JavaScript**; delivered full-stack web apps and REST APIs.

- Implemented **DevOps pipelines** with Puppet & Bash to streamline deployments.

- Practiced data structures and algorithms (DSA) & problem-solving for production readiness.

Graduate Research Assistant — University of Benin | Jan 2020 – Aug 2021

- Co-developed **spectrum analyzer** with off-the-shelf SDRs; built **intelligent wireless system** models for optimal RF usage.

- Co-authored **4+ academic journals**; collaborated closely with faculty and student teams.

Student Researcher Intern — University of Benin | Jun 2018 – Nov 2018

- Completed embedded systems projects (PIC microcontrollers).

- Built **OpenBTS + USRP B210** cellular network prototype; **FM TX/RX** with HackRF One.

- Investigated **wireless key-fob vulnerabilities** via SDR; contributed to a DSP textbook; supported project reviews.

SELECTED PUBLICATIONS

- **Self-supervised radio representation learning: Can we learn multiple tasks?** IEEE ICC 2025 (pp. 511–517).

- **Penetration Testing of GSM Network using MITM Attack.** Journal of Engineering Sciences, 2024.

- **Cost-effective cellular network using OpenBTS & USRP B210.** NRJEES, 2022.

TEACHING

Graduate TA — **Software Architecture**, **Full-Stack Web Development**, **Software Performance Evaluation** (UCalgary, 2024–2025)
TA — **Telecommunication Principles I**, **Microwave Engineering** (Uniben, 2018–2019)

CERTIFICATIONS & AWARDS

- **Alberta Graduate Excellence Scholarship (AGES) — International (2025)**

- **ALX Software Engineering Certification — Back-end (2024)**

- **AWS Machine Learning Foundation (2022)**