

Paul Okewunmi

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EDUCATION

- Obafemi Awolowo University** Ile-Ife, Nigeria
 - BSc. - Electronic and Electrical Engineering; 4.57/5.0 (First Class)* April 2018 - April 2024
 - Courses: Intelligent Control, Probability & Stochastic Processes, Computational Structures, Machine Learning, Digital Circuit Analysis & Design.*

SKILLS SUMMARY

- Languages** Python, JavaScript, MATLAB, HTML/CSS, SQL
- Frameworks** Pytorch, vLLM, Langchain, LlamaIndex, OpenCV, Huggingface, Flask, Fast API, MLFlow
- Tools/DB** Neo4j, Pinecone, Docker, GIT, PostgreSQL, MongoDB, Prefect, Tableau
- Cloud** AWS, GCP

EXPERIENCE

- 5.Y Inc. Singapore** Remote
 - Founding AI Engineer* Dec 2023 - July 2025
 - Led development of GLUCOSE, a conversational AI agents, equipped with custom tools to drive customer engagement
 - Implemented a framework for AI agent evaluation, simulating user interactions to ensure robust performance
 - Set up tracing and monitoring of LLM apps in production using langsmith to ensure high reliability.
 - GLUCOSE won the 2024 Product of the Year Award at the Generative AI Expo url
- Meta (MLH Fellowship)** Remote
 - Software Engineering Intern* Sept 2023 - Dec 2023
 - Contributed to the release of Meta's new laser-encoders library on PyPI for multilingual sentence embeddings
 - Created a Docker image that provides a REST interface to ease sentence embedding tasks, used by 1000+ users
 - Developed an interactive tutorial notebook demonstrating the multilingual sentence clustering capabilities of LASER, and hosted a demo on Huggingface Spaces.
- A²IR² Lab, Obafemi Awolowo University** Ile-Ife, Nigeria
 - (Research Assistant)* June 2022 - Jan 2025
 - I lead the computer vision and precision landing aspects of the DroneNet project, a smart quadcopter network for urban monitoring and situational awareness.
 - Led research on Adaptive ArUco Markers for precision landing, resulting in one published paper and a patent.
- Obafemi Awolowo University** Ile-Ife, Nigeria
 - Teaching Assistant (EEE503; Control Systems Engineering)* Nov 2024 - Mar 2025
 - Assisted students in understanding advanced control system concepts, including state-space analysis, stability criteria, and frequency-domain methods.
 - Conducted tutorial sessions and provided guidance on MATLAB simulations for system modeling and controller design.
- AirQo** Kampala, Uganda
 - ML Engineering Intern (MLOps & Data)* April 2022 - June 2022
 - Deployed fault detection models for air quality sensors across Uganda to help reduce sensor downtime by 80%.
 - Trained robust multi-label classifier to predict different categories of faults achieving over 90% accuracy
 - Created user interface to display model output and update values at hourly interval using ReactJS

PROJECTS

- SmolLM-GEC: LLM Fine-Tuning for Grammatical Error Correction) (url)**
 - Implemented a bare-bones version of the SmolLM-135M model, showcasing foundational understanding of transformer architectures and model development.
 - Fine-tuned SmolLM-135M for grammatical error correction (GEC) using the Grammarly CoEdit dataset, employing Supervised Fine-Tuning (SFT)
 - Applied advanced preference optimization techniques, including Direct Preference Optimization (DPO) and Contrastive Preference Optimization (CPO), to align model with human-like preferences.
- Code4me.AI (my own cursor dub): AI Powered VS Code Extension (url)**
 - Led a team to build an AI powered VS code extension for coding using natural language.
 - Implemented tool for code generation and auto-debugging, generating unit tests and crafting quality documentation.
- Jumia Lens: A visual product search engine for Jumia.com (Africa's largest e-commerce store) (url)**
 - Developed an end-to-end image retrieval app for ecommerce products using metric learning techniques.
 - Scraped over 3650 product images and details to create a robust and diverse dataset for model training.
 - Leveraged PineconeDB for rapid storage & retrieval of embeddings and metadata, ensuring seamless performance.

- **Drone Based Plant Monitoring System (Image Proessing, Computer Vision, Drone programming) (url)**
 - Built a system that uses object detection and object tracking to monitor plant health using a drone.
 - Added functionality for data collection that allows for the storage of snapshots of the recognized plants.
 - Decreased the time from disease identification to treatment by around 90%.
- **Òmòwé.ai: Your Study Copilot(url)**
 - Developed a comprehensive suite of AI-powered study assistants, aiding students in exam preparation.
 - Implemented a RAG system to enable searching of pre-indexed study materials across 100+ languages.
 - Built features including text summarization, QnA generation, and paraphrasing assistant.

HONORS, AWARDS & SCHOLARSHIPS

- Best Paper Award, AfricaNLP Workshop (ACL'25) – July, 2025
- Emerging Leader in AI, Black in AI - July 2025
- 1st Place Winner, Cohere Labs Aya Expedition Challenge 2025 (url) - May, 2025
- 1st Place Winner, Tunga Africa Generative AI Hackathon (url) - Dec, 2023
- 3rd Place Winner, Instadeep AI Hackathon (Deep Learning Indaba'23) (url) - Sept, 2023
- 3rd Place Winner, Cohere Multilingual AI Hackathon (url) - May, 2023
- 1st Place Winner Blackathon 2022 (url) - Feb, 2022
- Great Ife Alumni Scholarship Award - Feb, 2022
- Federal Government Scholarship Award - Dec, 2021
- Mr. Algorithm Award (Data Science Nigeria) (url) - Nov, 2020

PUBLICATIONS AND CONFERENCE POSTERS

- *"Evaluating Robustness of LLMs to Typographical Noise in Yorùbá QA."* AfricaNLP Workshop Co-located with ACL 2025.
- *"Adaptive-Size Fiducial Markers with Dual-Stage Kalman Filtering for Precision Rotary Wing UAV Landing."* Nigerian Journal of Technological Development (**Under Review**), January 2025.
- *"Unmasking 'Fake News': A Pipeline for Fact-Checking Radio Shows via AI-Driven Claim Extraction."* Poster presented at Deep Learning Indaba 2023, September 2023. url
- *"Drone-Based Monitoring System for Large-Scale Farming."* Awarded **Best Poster** at AI Bootcamp Nigeria 2021, October 2021. url
- *"Plantnosis: An AI Plant Diagnostic Tool."* Awarded **Best Poster** at AI Bootcamp Nigeria 2020, November 2020. url

TALKS

- *"A Picture Is Worth a Thousand Words: Building a Visual Search Engine."* Presented at PyCon Nigeria 2024. url
- *"Tools for the Future: Exploring the Current Landscape of Python Frameworks and Tools in the GenAI Era."* Presented at PyCon Africa 2024. url
- *"Prompt Engineering 101: A Guide to Building Powerful Prompt-Based Applications."* Presented at DataFest Africa 2023. YouTube Link

VOLUNTEER EXPERIENCE

- **ML Collective, Project Lead**
Leading a research project involving applying model cascading techniques to multimodal tasks Feb 2025 - Present
- **Cohere Labs; Afri-Aya**
Curating culturally relevant African vision datasets for finetuning VLMs. May 2025 - Present
- **Campus Lead, Data Science Nigeria**
Lead DSN's campus activities and initiatives related to data science & ML on my campus. Oct 2019 - Aug 2024
- **Technical Director at IEEE Student Society**
Handling and management of technicalities (power, sound, etc.) of society events. Jun 2021 - Aug 2022