

Ejiabor Chinweogo Rita

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PROFESSIONAL SUMMARY

Computer Science undergraduate with experience building machine learning systems and exploring how intelligent systems can learn and make reliable decisions under limited data and computational resources. Experienced in machine learning, statistical modeling, software development, and data-driven problem solving, with projects spanning healthcare and intelligent decision systems. Interested in machine learning research and engineering, particularly efficient, reliable, and interpretable intelligent systems.

EDUCATION

University of Nigeria, Nsukka

Expected 2028

B.Sc. in Computer Science | CGPA: 4.6/5.0 | Rising Junior (3rd Year)

Nsukka, Enugu State

• **Relevant Coursework:** Artificial Intelligence, Calculus, Probability and Statistics, Data Structures & Algorithms.

PUBLICATIONS

Eze J, Mbanwusi F, Oparaku C, Uzoma B, **Ejiabor R**, Nzeribe M. “Integrating Neuroscience and Basic Neurological Life Support into General Studies in Nigerian Federal Universities: Students’ Knowledge, Perspectives, and Attitudes.” Conference abstract, *Neuroscience Society of Nigeria (NSN) Annual Conference*, 2026. [Publication details](#)

SELECTED RESEARCH & TECHNICAL PROJECTS

Antimicrobial Resistance Surveillance System (Requence / LaaS)

2026

Methods: Python, Gradient Boosting, AMRFinder, Snippy, Bioconda, FastAPI

[GitHub](#) — [Article](#)

- Co-led architecture design to process **pathogen whole-genome sequences** for geo-temporal epidemiological surveillance of antimicrobial resistance in Africa.
- Engineered a bioinformatics pipeline extracting thousands of genomic features (resistance genes, SNPs, amino-acid k-mers) from 300+ *Salmonella* and *E. coli* genome assemblies.
- Implemented the ML layer using **gradient boosting and rigorous cross-validation** to model antibiotic resistance, integrating tiered confidence scoring for surveillance teams.
- Optimized the inference pipeline to deliver predictive results within **minutes of receiving genome data**, accelerating data availability for researchers.

U.S. Socioeconomic Income Risk Classifier

2025

Methods: Python, Scikit-learn, Pandas, Seaborn, GridSearchCV

[GitHub](#)

- Benchmarked five machine learning algorithms on a census-scale dataset to model and predict socioeconomic risk.
- Executed **rigorous statistical validation, feature dependency testing, and hyperparameter tuning** via GridSearchCV.
- Achieved a ROC-AUC of **0.8949** and systematically improved primary classification target precision from 70.6% to **83.5%**.

VeriTrue: Counterfeit Detection & Consumer Health System

2025

Methods: FastAPI, Pinecone, Embeddings, Vector Search

[Github](#)

- Designed a **vector similarity classification engine** combining product metadata and barcode verification to detect counterfeit goods, addressing public health risks tied to counterfeit medicine.
- Built “Vero,” an **explainability module** that generates validation rationales in the end user’s own locally selected language, improving accessibility for non-English-first users.

CardioTwin: Physics-Informed Cardiovascular Event-Based Digital Twin

In Progress

Methods: PINNs, MindSpore, 0D Lumped Parameter Models, ESP32-S3 sensors, Edge-to-Cloud

- Developing a **low-resource cardiovascular digital twin** combining non-invasive physiological signals with mechanistic modeling to estimate individualized cardiovascular parameters.
- Exploring **physics-informed neural networks (PINNs)** and an **event-driven edge-to-cloud architecture** to incorporate physiological constraints while enabling computationally efficient state updates.

TECHNICAL SKILLS

Programming: Python, SQL, LaTeX, Linux/Unix.

Machine Learning & Statistics: Supervised learning, Deep Learning, gradient boosting, decision trees, feature selection, statistical analysis, model evaluation, cross-validation, hyperparameter tuning, SHAP.

Bioinformatics & Genomics: Whole-genome sequence analysis, genomic datasets, Snippy, AMRFinder, Bioconda.

Libraries & Tools: Scikit-learn, Pandas, Mindspore, NumPy, Matplotlib, Seaborn, FastAPI, Streamlit, LangChain, Pinecone, FAISS, Git

LEADERSHIP & RESEARCH COMMUNITY

- **Hackathon Judge:** “Build with Replit” — National Association of Computing Students (NACOS), UNN Branch.
- **Workshop Facilitator:** Women Techmakers Nsukka (IWD 2026) — Mentored 20+ students on training and deploying models via an interactive website I built. [GitHub](#)
- **AI Literacy Lead:** Green Circle Initiative — Contributed to pan-African AI literacy outreach for secondary school students on climate sustainability.

AWARDS & CREDENTIALS

- **Academic Honors:** 1st Place, Ogun State Mathematics Olympiad (2023) | 8th Place (Regional), National Biology Olympiad (2023)
- **Competitions:** 4th Place, GDG UNN “Build with Gemma” Hackathon | Regional Semifinalist, Technovation Girls Challenge (2024) | Honorable Mention, Slingshot Challenge (2026) for Project E-link
- **Certifications & Training:** *Certified Data Scientist with Python* (DataCamp) | *Fundamentals of Data Science in Precision Medicine & Cloud Computing* (Stanford Data Ocean)