Edward Ajayi

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EDUCATION

Carnegie Mellon University Africa   Kigali, Rwanda
Master of Science in Engineering Artificial Intelligence   *Aug. 2024 – Present*
- **Relevant Courses:** Natural Language Processing, Data Science and Applied Machine Learning
- **Specializations:** Data Science, Machine Learning, NLP

Ekiti State University   Ekiti, Nigeria
Bachelor of Science in Computer Science   *Oct. 2014 – Nov. 2019*
- **Specializations:** Computer Science

EXPERIENCE

Research Intern - Business Automation (Agentic AI)   Kigali, Rwanda
CMU-Africa   *Jun. 2025 – Aug. 2025*
- Developing and prototyping an agentic AI framework to automate complex business workflows.
- Researching and implementing AI safety protocols and robust LLM reasoning for ethical alignment and deployment.
- Analyzing agent performance to establish benchmarks for human-in-the-loop oversight and develop explainability metrics to support transparent corporate accountability.

Operations Analyst   Lagos, Nigeria
PricePointe   *Sep. 2021 – Dec. 2021*
- Analyzed pricing strategies with SQL and Python, boosting revenue by 20% while maintaining customer loyalty.

RESEARCH AND PUBLICATIONS

Multilabel ML Approach for Mental Health and Cyberbully Detection [Paper]   *Under Review*
- Compared traditional ML models (e.g., SVM, Random Forest) and LLMs to classify emotions and harmful content from social media data.
- Used LLM explanations to improve model transparency and interpretability.
- Analyzed trade-offs in speed, depth, and explainability for building robust, trustworthy conversational AI.

Language Diversity: Evaluating AI Performance on African Languages [Paper]   *Under Review*
- Analyzed linguistic data from online platforms assessing the digital representation of three African languages.
- Evaluated the performance of a multilingual LLM and language identification tools in handling code-switched text
- Authored a paper that highlights the challenges of data sparsity and quality, demonstrating the critical need for robust, culturally relevant datasets to improve AI performance for low-resource languages.

PROJECTS

AI Workflow Automation Agent | *Python, LangChain, FastAPI, Google Sheets API, SMTP*   *Jul. 2025*
- Built an autonomous agent that interacts with a Google Form–linked Sheet to process business requests.
- Sends email notifications to approvers, who review AI-generated content via a custom dashboard.
- Integrated a QA bot to monitor and update sheets based on approvals and feedback.

Multichannel HR Assistant Bot (In Progress) | *RAG, Python, Slack API, FastAPI, LangChain*   *Ongoing*
- Developing a Retrieval-Augmented Generation HR assistant accessible via Slack, email, and web.
- Supports employee queries using secure internal document retrieval and conversational response generation.

Kigali Smart City Guide | *Python, NLP, Neo4j, LangChain, Llama*   *Nov. 2024*
- Built a Retrieval-Augmented Generation chatbot, ensuring safe and context-aware responses for urban use cases.

Stock Index Financial Data Analysis - DJIA | *Python, BeautifulSoup, Yahoo Finance API, Seaborn*   *Dec. 2024*
- Analyzed DJIA trends with dimensionality reduction, explaining 95% of variance for robust financial insights.

Technical Skills

Programming: Python (Intermediate), SQL (Intermediate)
Data Science & Machine Learning: Pandas, NumPy, Matplotlib, Seaborn, Scikit-Learn, PyTorch
Natural Language Processing: Langraph, OpenAI Agents SDK, NLTK, Sentiment Analysis, LLMs, Prompt Engineering, Retrieval Augumented Generation
Tools: Jupyter, MS Excel, BeautifulSoup

Soft Skills

Critical Thinking, Problem-Solving, Collaboration, Communication, Adaptability

Training

Learner, Natural Language Processing Specialization Online
Coursera, DeepLearning.AI *May 2025*
- Completed 4-course specialization covering NLP with classification, sequence models, attention, and transformers.

Learner, AI Agents Course Online
Hugging Face *Mar, 2025 – May, 2025*
- Studying agent design and safety fundamentals to build robust AI systems.

Learner, AI Safety Atlas Online
AI Safety Atlas *Mar. 2025 – May, 2025*
- Exploring technical AI safety topics, including alignment and risk mitigation strategies.

Remote Data Science Intern Remote
Ingressive For Good & DataCamp *Apr. 2023 – Sep. 2023*
- Completed DataCamp Data Science Career Track, mastering data analysis and ML through 7 projects.

Volunteering/Leadership

President, CMU-Africa Research Club Kigali, Rwanda
Carnegie Mellon University Africa *Jan. 2025 – Dec. 2025*
- Launched a newsletter and research clusters to foster AI safety and NLP collaboration.
- Increased student research participation through workshops and research club seminars.
- Organized 4+ seminars to boost student publications by 80% by 2025.

IEEE Student Member CMU-Africa
Institute of Electrical and Electronics Engineers *Feb. 2025 – Present*
- Collaborating with IEEE members to push research initivatives among CMU Africa Research Club mambers.

Certifications

- Microsoft Certified Azure Data Scientist Associate - [View](#)
- Microsoft Certified Azure Data Fundamentals - [View](#)
- DataCamp Python Data Associate - [View](#)

Honors and Awards

- Mastercard Foundation Scholarship, Carnegie Mellon University Africa
- Federal Scholarship Board Award for Undergraduates, Ekiti State University