

# Fowotade Tolulope Elijah

[Linkedin Profile](#)

08144229566

[tolulopee90@gmail.com](mailto:tolulopee90@gmail.com)

[GITHUB](#)

## PROJECTS

- ✓ **Facial Expression Classification | [GITHUB](#)**

Mar 2025

1. Developed a facial emotion recognition model using PyTorch and a custom-labeled dataset of facial images.

2. Fine-tuned a pre-trained ResNet18; applied data augmentation, monitored accuracy (~90%), and used scikit-learn, matplotlib, and tqdm for evaluation.

3. Prepping deployment via Streamlit or Gradio for interactive real-time expression classification.
- ✓ **Research Assistant Agent | [GITHUB](#)**

Apr 2025

1. Engineered an agentic AI pipeline using CrewAI to autonomously extract, summarize, and synthesize academic content.

2. Deployed GPT-3.5-turbo with PyMuPDF and LangChain to parse PDFs and generate concise summaries of research findings.

3. Structured with modular Agent, Task, and Crew abstractions for scalable academic research assistance.
- ✓ **Product Recommendation Using RAG | [GITHUB](#)**

Aug 2024

1. Built a multimodal RAG system combining text/image features with OCR and CNNs to recommend products.

2. Embedded inputs using sentence-transformers, stored vectors in Pinecone, and queried them via cosine similarity.

3. Served results via a FastAPI backend; integrated PyTorch and Keras for hybrid modeling.

## EXPERIENCE

### MACHINE LEARNING FREELANCE

- ✓ **Trash Classification Using CNNs | [GITHUB](#)**

Apr 2024

1. Built a CNN-based model using TensorFlow/Keras to classify trash images into categories for smart waste sorting.

2. Applied data augmentation to improve generalization and prevent overfitting on a manually labeled dataset.

3. Achieved high classification accuracy; project aimed at automating waste management workflows.
- ✓ **IoMT Attacks Simulation and Mitigation Tool | [GITHUB](#)**

Jul 2024

1. Designed an LLM-powered app to simulate cybersecurity attacks on IoMT devices and generate mitigation responses using GPT-3.5 and Hugging Face models.

2. Applied zero/few-shot prompting with domain-specific prompts; backend via FastAPI and frontend with Streamlit.

3. Enabled user-defined scenarios with real-time interaction and modular structure for future threat intelligence API integration.

### DATA SCIENCE INTERN | HAMOYE | [CERTIFICATES](#)

Sept. 2023 – Jan 2024

- ✓ **Premier Project – African Conflict Fatality Forecasting**

1. Applied classification, regression, time series, and neural networks to forecast conflict-related fatalities using historical datasets.

2. Led a team of interns, managing GitHub collaboration, data wrangling, EDA, model training, and performance tuning with Scikit-Learn and TensorFlow/Keras.

3. Conducted feature engineering, handled missing data, and ensured reproducibility through structured workflows.
- ✓ **Capstone Collaboration**

Contributed to early-stage planning and topic ideation before stepping back due to academic commitments.

### RESEARCH INTERN | STEMRES

May. 2025 – Present

- ✓ **AI-Powered Localization of Educational Content**

1. Supported a Nigerian edtech startup in evaluating AI strategies for localizing foreign educational content to better reflect Nigerian language, context, and cultural examples.

2. Conducted a competitive analysis of global and local AI-powered educational platforms, highlighting use cases in translation, curriculum adaptation, and contextualized learning.

3. Researched and compared large language models (LLMs) based on cost, ease of integration, and suitability for Nigerian educational needs.

4. Recommended affordable, open-source LLMs capable of performing cultural localization, name substitution, and content adaptation for teachers and students.

5. Delivered structured findings in a 500–1000 word report to guide early-stage decisions on model selection and deployment architecture.

## LANGUAGES AND TECHNOLOGIES

- **Languages:** Python, SQL, C
- **ML & AI Frameworks:** Scikit-learn, TensorFlow, PyTorch, Keras, XGBoost, OpenCV, NLP tools and libraries
- **Deep Learning:** CNNs, RNNs, ViTs, Transformers, LSTMs, GANs, Autoencoders, Encoder-Decoder setups, Attention-based models
- **Libraries & Tools:** Pandas, NumPy, Matplotlib, Seaborn, SciPy, NLTK, SpaCy, Hugging Face Transformers, FastAPI, Streamlit, LangChain, RAG
- **Platforms:** Jupyter, Colab, Kaggle, GitHub, Hugging Face, working with LLMs
- **Soft Skills:** Excellent communication, Emotional Intelligence, Rapport Building, People management.

## EDUCATION

B. Tech, (Computer Science) **Federal University of Technology, Akure**  
**4.65/5.00 CGPA**

- Member of Data Science Network Nigeria, Futa Volunteering Club

Sept 2021–April 2026

## CERTIFICATES

Generative AI with Large Language Models (AWS) | [CERTIFICATE](#)

Jul 2024

Visualizing Filters of a CNN using TensorFlow | [CERTIFICATE](#)

Dec 2022

Deep Neural Networks with Pytorch | [CERTIFICATE](#)

Dec 2022

Neural Network, Image Recognition & Object Detection | [CERTIFICATE](#)

Nov 2023

Developing Your Emotional Intelligence (LinkedIn) | [CERTIFICATE](#)

Aug 2024