ABUBAKAR SADIQ MUHAMMAD

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OBJECTIVE

A driven and detail-oriented AI graduate with a Distinction in M.Sc Artificial Intelligence, passionate about applying machine learning and full-stack development skills to create socially impactful software solutions. With experience spanning mobile development, web applications, and machine learning pipelines, I bring proven adaptability and collaborative skills to tackle diverse technical challenges. Eager to contribute to Storm ID's innovative work in the public sector and grow as an AI Engineer within a collaborative, agile team.

EDUCATION

Heriot-Watt University   Edinburgh
M.Sc in Artificial Intelligence   *January 2024 – May 2025*
Distinction Award

Gombe State University   Nigeria
B.Sc Computer Science   *October 2016 – August 2021*
CGPA: 4.97/5.0

WORK EXPERIENCE

IT Teacher   December 2021 – June 2023
Amamex International Academy
  – Taught Information Technology curriculum to junior secondary school students, covering computer fundamentals, basic programming, and digital literacy skills.
  – Developed lesson plans and educational materials to effectively deliver IT concepts to students aged 10-15 years.
  – Conducted practical computer lab sessions and supervised students in hands-on technology projects and assignments.
  – Assessed student progress through examinations, assignments, and provided individualized support to enhance learning outcomes.

IT Intern   April 2019 – September 2019
University of Abuja Teaching Hospital
  – Supported hospital-wide deployment of new Hospital Management System, providing networking infrastructure and technical support across multiple departments.
  – Conducted training sessions for hospital staff on system usage and provided ongoing technical support during system rollout phase.
  – Ensured network connectivity and troubleshooted network issues across hospital departments to maintain system functionality and uptime.
  – Collaborated with IT team to configure and maintain network infrastructure supporting critical healthcare operations.

AWARDS & ACHIEVEMENTS

  • Petroleum Technology Development Funds (PTDF) Masters Scholarship.
  • Best Graduating Student from Gombe State University

PROJECTS

Counterspeech Generation for Online Toxicity using SLMs   September 2024 – April 2025
  Msc thesis project which investigated the effectiveness of using Small Language Models to generate counterspeech to mitigate hatespeech online
  – Experimented with different open-source Small Lanaguage Models to generate counterspeech
  – Used different prompt strategies(zershot, oneshot and fewshot) and model finetuning to generate counterspeech
  – Conducted both automatic and human evaluations to assess the suitability and relevance of the generated counterspeech to hatespeech

- **Tools:** Langchain, Ollama, Huggingface Transformer, Unsloth, OpenAI-API.

Predicting Skin Lesion Malignancy Using Machine Learning   September 2024 – November 2024
- Built predictive models to classify skin lesion malignancy using multimodal data (images + metadata) from the PAD-UFES-20 dataset (2,298 samples).
- Achieved 89% F1-score with Random Forest on tabular data; used SMOTE to handle class imbalance.
- Implemented image and hybrid models using HOG, LBP, and ResNet152V2 with feature concatenation.
- Performed clustering to explore relationships between lifestyle factors (e.g., smoking, alcohol) and malignancy risk.
- **Tools:** Python, scikit-learn, TensorFlow/Keras, OpenCV, pandas, NumPy, Jupyter Notebook, Git / Github.

Code Guardians: Gamified Mobile App for Code Security Education   January 2024 – March 2024
- Designed a gamified mobile app using the Octalysis Framework to teach code security concepts to teenagers.
- Developed interactive features including coding challenges, quizzes, leaderboards, and community discussions to enhance engagement.
- Incorporated accessibility features such as audio feedback, speech navigation, and visual aids for inclusive learning.
- Created low- and high-fidelity prototypes in Figma, applying HCI principles and user personas.
- Used ChatGPT to generate immersive story content to support learning narratives.
- **Tools:** Figma, ChatGPT, HCI design methods, Game Accessibility Guidelines.

Impact of Voice on Disclosure   January 2024 – March 2024
- Investigated the effect of artificial voices (male, female, child, robot) on user disclosure in conversational interactions.
- Implemented conversational agents using Text-to-Speech (TTS), Google ASR for speech recognition, and Rasa for dialogue management.
- Designed experiments, developed dialogue flows, and analyzed user responses to measure information disclosure differences.
- **Tools:** Google TTS/ASR, Rasa, conversational AI frameworks, Git / Github.

Airport Check-in Simulation System   January 2024 – March 2024
- Developed multi-threaded airport check-in simulation system in Java with real-time Swing GUI using agile methodology.
- Implemented concurrent processing for check-in desks and passenger queues using synchronized methods and thread management.
- Applied design patterns (Singleton, MVC, Observer) with dynamic counter scaling and priority-based queuing system.
- **Tools:** Java, Swing, Multi-threading, Design Patterns, Agile/Scrum methodology, Git / Github.

Bakery Inventory Management System — Java Swing Application   December 2022
- Developed comprehensive inventory management system for local bakery using Java Swing to streamline business operations.
- Implemented stock management module for tracking raw materials, finished products, and automated low-stock alerts.
- Created financial tracking system for monitoring daily income, expenses, and profit margins with reporting capabilities.
- Built retailer management module to track bread distribution, delivery records, and payment status for multiple retail partners.
- **Tools:** Java, Swing GUI, Database Management, File I/O, Business Process Automation.

Android-Based Real-Time Driver Drowsiness Detection System   October 2022
Undergraduate Final Year Project
- Developed lightweight Android application for real-time driver drowsiness detection using computer vision and machine learning techniques.
- Implemented face detection using Google's ML Kit BlazeFace algorithm with eye status monitoring and customizable time sensitivity (0.5-2.5 seconds).
- Created offline system with alarm alerts, night-mode functionality, and low-light detection capabilities using infrared camera support.
- Published research paper in Journal of Operating Systems Development & Trends (STM Journals, ISSN: 2454-9355).
- **Tools:** Android Development, Google ML Kit, BlazeFace Algorithm, Computer Vision, Mobile GPU Optimization.

Skills

Programming Languages: Python, Java, JavaScript, TypeScript, Go
Tools & Frameworks: React.js, Svelte, Node.js, Pandas, Matplotlib, scikit-learn, LangChain, Ollama, Hugging Face Transformers, PyTorch, TensorFlow, Git/Version Control
Microsoft Office: Power BI, Excel, PowerPoint, Word
Soft Skills: Leadership and Communication Skills, Math and Design Skills, Problem-solving and Organizational Skills

Certifications

Certificate in Project Management | *Skills Edge Consulting Limited*   2022

Certificate in Customer Service | *Skills Edge Consulting Limited*   2022

Certificate in Human Resources Management | *Skills Edge Consulting Limited*   2022

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Storm ID Hiring Team
Leith Assembly Rooms
43 Constitution Street
Edinburgh, EH6 7BG

Application for Graduate AI Engineer

Dear Storm ID Hiring Team,

I am writing to express my interest in the Graduate AI Engineer position at Storm ID, which I discovered through the presentation by the Storm ID team at the Scottish career fairs. I recently completed my M.Sc. in Artificial Intelligence at Heriot-Watt University with Distinction, and I'm excited by the opportunity to apply my academic experience in machine learning to meaningful, real-world projects that positively impact society. Although my experience with AI has been entirely academic so far, my projects have been designed to address real-world challenges. For example, as part of a collaborative team project, I worked on predicting skin lesion malignancy using multimodal data. We developed machine learning models that achieved an 89% F1-score using a Random Forest classifier, applying techniques like SMOTE to address class imbalance. I also explored hybrid image-tabular pipelines using ResNet and handcrafted features. This work gave me strong exposure to end-to-end ML development — from data preprocessing to model evaluation — using tools such as Python, scikit-learn, and TensorFlow.

One of my most socially impactful academic projects was my undergraduate capstone: an Android-based driver drowsiness detection app. Built with computer vision and lightweight deployment in mind, the app aimed to help prevent fatigue-related road accidents. It was designed for practical use in low-resource settings, and it strengthened my skills in mobile development, computer vision, and user-centered design.

In addition, my internship at the University of Abuja Teaching Hospital gave me first-hand insight into the complexities and inefficiencies within public sector environments. Supporting a hospital-wide system rollout, I worked on networking infrastructure and staff training, and I saw how digital systems — and by extension, AI — could be leveraged to improve service delivery and operational efficiency. This experience cemented my desire to build technology that improves lives in public service contexts.

My master's thesis, "Counterspeech Generation for Online Toxicity using Small Language Models," focused on the use of generative AI to counter hate speech — again emphasizing my commitment to socially responsible AI development. Across all of my projects, I've built strong collaborative and agile skills, often working in teams to apply technical knowledge in time-constrained, goal-driven environments.

I'm eager to bring this foundation to a professional setting and contribute to impactful solutions like Storm ID's Agentic Workflow Engine. The opportunity to work on public sector projects and earn Azure certifications within a supportive and innovative team excites me greatly. Thank you for considering my application. I would welcome the chance to further discuss how my academic training and passion for ethical AI can contribute to your team.

Best regards,
Abubakar Sadiq Muhammad