

# ABUBAKAR SADIQ MUHAMMAD

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## SUMMARY

Data Scientist & Machine Learning Engineer with 2 years of experience building and deploying end-to-end AI solutions. Holds an M.Sc. in Data Science and a B.Sc. in Computer Science. Specialises in Generative AI, including RAG pipelines, agentic systems, and LLM-powered applications with multiple projects deployed on AWS using LangChain, Streamlit, and n8n. Proven track record in MLOps (Docker, Kubernetes, MLflow), NLP, computer vision, and predictive modelling. Combines strong analytical skills with hands-on delivery to turn complex problems into production-ready solutions. Passionate about leveraging AI for real-world impact and continuous innovation.

## TECHNICAL SKILLS

Category	Skills & Technologies
Programming & Databases	Python (Pandas, Scikit-learn, TensorFlow, PyTorch), R, SQL, JavaScript, Dart, MySQL, MongoDB, HTML/CSS
Machine Learning & AI	Predictive Modelling, Classification, Clustering, Deep Learning (CNN, LSTM, VGG16), NLP, Computer Vision, LLMs, RAG, Agentic AI, LangChain, LangGraph, Ollama, HuggingFace Transformers
MLOps	Docker, Kubernetes, Git/GitHub, MLflow, CI/CD for ML, Model Versioning, Deployment & Monitoring
Data Analysis & Visualisation	EDA, Feature Engineering, Power BI, Tableau, Streamlit, Matplotlib, Seaborn, Excel
Cloud & Deployment	AWS (EC2, deployment), Firebase
Frameworks & Tools	Flask, Node.js, React, Flutter, Bootstrap, Tailwind CSS, Material UI, n8n (workflow automation), BeautifulSoup, FAISS, Pinecone

Development Tools	VSCode, Jupyter Notebook, Git
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## PROJECT

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AI-POWERED NEWS SUMMARIZER & EMAIL Agent | N8N, Langchain, Xai Grok, NewsAPI, Gmail Api

- Built an autonomous agent that fetches the latest news via NewsAPI, intelligently summarises articles using GROK LLM, and emails a beautifully formatted HTML report.
- Implemented tool-calling logic to decide when to fetch news and when to send emails, demonstrating a complete agentic workflow.

AUTOMATED STUDENT ENGAGEMENT REPORTING | n8n, Google Sheets, QuickChart, Gmail, LangChain

- Developed an ETL pipeline triggered by Google Sheets updates: data cleaning, KPI calculation (e.g., average quiz score, total videos watched), and dynamic chart generation via QuickChart.
- Integrated an LLM to produce a concise narrative summary of engagement metrics and emailed the full HTML dashboard to stakeholders.

## GENERATIVE AI & RAG APPLICATIONS (AWS-DEPLOYED)

A suite of LLM-powered applications built with Llama3.5, RAG, Streamlit, FAISS/Pinecone, and HuggingFace embeddings, all deployed on AWS EC2:

- ChartScholar – Conversational Q&A over uploaded PDFs/charts; users receive cited answers from their documents.
- InsuranceClaimAutomation – Automates claim processing by extracting information from insurance documents and generating summaries/decisions.
- ResearchRagChat – A research assistant that queries scientific papers using semantic search and returns answers with source citations.

- WebScrapingRagChat – Combines real-time web scraping (BeautifulSoup) with RAG to answer queries based on the latest online content.

#### FACE RECOGNITION SYSTEM | Python, OpenCV, LBPH

- Designed and implemented an end-to-end, on-device face recognition pipeline involving dataset collection, model training using the LBPH algorithm, and real-time detection.
- Integrated the system with an automated attendance logging mechanism.

#### SENTIMENT ANALYSIS AND RATING PREDICTION + DASHBOARD | Python, NLP, CNN, LSTM, Power BI

- Scraped and cleaned review data from multiple e-commerce platforms (Lazada, Shopee, Zalora), including translating Bahasa Malay, Tamil, and Chinese text to English.
- Performed comprehensive EDA and feature engineering, addressing class imbalance with SMOTE to improve model generalisation.
- Developed and tuned deep learning models (CNN and LSTM), increasing prediction accuracy from 70% to 85%.
- Built an interactive Power BI dashboard to visualise sentiment trends and provide actionable insights from user reviews.

#### END-TO-END BREAST CANCER PREDICTION

- Full-stack ML prototype that ingests the Wisconsin Breast Cancer dataset, trains a RandomForest model, and exposes a user-facing prediction UI via Flask. Includes standalone data script (breast\_cancer\_pred.py), web server (app.py), Jinja2 frontend (index.html), and a simple remote deploy workflow using PuTTY / WinSCP and AWS EC2.

#### MLOPS: END-TO-END MODEL DEPLOYMENT | Docker, Kubernetes, Git, Python

- Designed and implemented a full MLOps pipeline to transition a machine learning model from development to a scalable production environment.

- Containerised the model using Docker, ensuring consistent behaviour across all systems.
- Deployed the container locally using Kubernetes, orchestrating the service for high availability and easy scaling.
- Established a robust MLOps workflow encompassing version control with Git, automated pipeline building, and production deployment, demonstrating the full lifecycle from experiment to operational service.

#### CHEST X-RAY CLASSIFICATION | Python, TensorFlow, VGG16, Streamlit

- Developed a high-accuracy (91% test accuracy) convolutional neural network model using a pre-trained VGG16 architecture fine-tuned on a dataset of chest X-ray images.
- Implemented a data preprocessing pipeline for image resizing, grayscale conversion, and normalisation.
- Built and deployed a user-friendly Streamlit web application that allows users to upload an X-ray image and receive an instant prediction (Normal/Pneumonia) with a confidence score.

## EDUCATION

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### UNIVERSITI TEKNOLOGI MALAYSIA, Skudai, Johor

- **Degree:** Master of Science (Data Science)
- **Completion Date:** August 2024
- **Coursework:** Data Governance, Business Intelligence, Big Data Computing, Advanced Analytics, Statistics for DS, Big Data Management, Data Mining, Research Methodology and IT Project Management.
- **Thesis:** Sentiment Analysis and Rating Prediction of An E-Commerce Platform in Malaysia using CNN and LSTM.
- **Result:** 3.65 CGPA
- **Supervisor:** Prof. Dr Mohd Shahizan bin Othman

**GOMBE STATE UNIVERSITY, Gombe, Nigeria**

- **Degree:** Bachelor of Science (Computer Science)
- **Completion Date:** September 2018
- **Project:** Heuristic Analysis of SQL Injection Attacks on Website Applications
- **Result:** 4.54 CGPA (**First Class Honour**)
- **Supervisor:** Dr Adamu Hussaini

**EXPERIENCE**

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**UNIVERSITI TEKNOLOGI MALAYSIA, SKUDIA, JOHOR MALAYSIA**

- **Role:** Teaching Assistant
- **Duration:** April 2025 – July 2025
- **Key Achievements**
  - Teach Object Oriented Programming for 200-level students
  - Supervised and marked exams
  - Tutorial on Java Programming
  - Organised an educational tour for students

**ABUJA INVESTMENT COMPANY LIMITED, Abuja, Nigeria**

- **Role:** IT Analyst, ICT Department
- **Duration:** June 2021 – March 2025
- **Responsibilities:**
  - Troubleshoot hardware, software, and network issues, providing technical support to staff and ensuring timely resolution.
  - Managed user accounts, permissions, and system access via Active Directory.
  - Monitored system performance, security, and backups to ensure compliance with the policies.
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**YOSHI FOOTBALL ACADEMY, Dubai, UAE**

- **Role:** TechLead, ICT Team
- **Duration:** April 2024 – 2025

- **Key Achievements**

- Lead the development team, providing guidance and mentorship.
- Architect and implement scalable, secure, and efficient technology solutions.
- Ensure alignment with industry trends and best practices.

## **EDUREKA.CO**

- **Role:** Data Science and Machine Learning Internship
- **Duration:** August 2023 – March 2024
- **Key Certification**
  - Deep Learning
  - Machine Learning
  - Python & SQL fundamentals for Data Science
  - Business Intelligence using Tableau
  - [Super Intern](#), Best performance award

## **INSTITUTE FOR DEVELOPMENT RESEARCH (DATAVILLE RESEARCH)**

- **Role:** Graduate Internship in International Development
- **Duration:** April 2023 – June 2024
- **Focus Area**
  - Research Methodology for development
  - Mobile Data Collection
  - Project Management in International Development
  - GIS Mapping for Development
  - Monitoring and Evaluation
  - ICT for Development
  - Data Science for Social Good
  - Artificial Intelligence for International Development

## **UPPER BENUE RIVER BASIN DEVELOPMENT AUTHORITY, Adamawa, Nigeria.**

- **Role:** Data Processing 1 (Contract)

- **Duration:** August 2020 – June 2021
- **Contribution**
  - Managed the preparation and coding of sensitive data for system entry, ensuring accurate record-keeping within the authority's database.
  - Served as a primary contact for inquiries, screening calls and composing correspondence to facilitate efficient communication between internal departments and external stakeholders.
  - Verified data completeness via online terminals and assisted with general work processing tasks, supporting the ICT and administrative teams in meeting operational deadlines.

#### **URMALL.NG, Abuja, Nigeria**

- **Role:** Software Developer
- **Duration:** April 2020 – January 2023
- **Contribution**
  - Led a development team in architecting and implementing scalable, secure web and mobile applications using the MERN stack and Flutter.
  - Integrated payment gateways and implemented business analytics dashboards to track key performance indicators.

#### **ADAMAWA STATE UNIVERSITY, MUBI, Adamawa, Nigeria.**

- **Role:** Graduate Assistant (NYSC)
- **Duration:** October 2018 – October 2019
- **Contribution**
  - Delivered lectures and practical tutorials on object-oriented programming (C++) to over 250 students across 4 departments, ensuring strong foundational coding skills.
  - Created comprehensive lecture modules and instructional notes to standardise course delivery and enhance student comprehension.
  - Collaborated with senior lecturers to facilitate 400-level data communication and network courses, assisting with content composition and lab supervision.

- Managed the grading process for tests and exams, ensuring accurate evaluation and timely feedback for undergraduate students.

### **BRITEK COMPUTER TRAINING INSTITUTE, Gombe, Nigeria.**

- **Role:** Software Developer (SIWES - Industrial Training Internship)
- **Duration:** August 2017 – February 2018
- **Contribution**
  - Assisted in software development, conducted code reviews, and collaborated with a team using Agile practices.
  - Supported debugging, testing, and deployment processes, and contributed to technical documentation.

### **CERTIFICATION**

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- Deep Learning Certification (Edureka)
- Machine Learning (Edureka)
- Business Analysis and Tableau Certification (Edureka)
- Graduate Internship in International Development (Dataville Research)
- Super Intern Certification (Edureka)
- ReactJS and Redux (Sololearn)
- JavaScript (Sololearn)
- Data Science, Big Data, and Advanced AI (Udemy)
- Face Recognition System (Udemy)
- Machine Learning Operations (MLOps) (Udemy)
- Computer Vision Fundamentals

## REFERENCES

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- i. Ts. Dr Chan Weng Howe  
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- ii. Adamu Hussaini Ph.D. –  
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