

CHIDUBEM NDUKWE

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Summary

Most ML engineers stop at the model. I build the infrastructure around it pipelines, feature stores, serving layers, and monitoring that keeps everything running in production. I also work in robotics software, which means I think in systems. Open to remote ML/MLOps engineering roles.

Education

Nile University of Nigeria

B.Eng. Mechatronics Engineering

Oct. 2021 – Jul. 2026 (Expected)

Abuja, Nigeria

Projects

Autonomous Waste Collection Robot (Cika) | *ROS2, SLAM, YOLOv8, RTAB-Map, Nav2*

- Designed and implemented a 4WD skid-steer autonomous mobile robot with a 6-DOF robotic arm for waste detection, collection, and segregation as a final-year capstone project.
- Built a YOLOv8n-based perception pipeline for waste detection and two-class classification (paper/plastic), deployed as a ROS2 node publishing through a custom `/cika/waste_detections_classified` topic.
- Fused an RPLIDAR C1 and OAK-D Lite depth camera for perception; adopted RTAB-Map RGB-D SLAM for occupancy grid mapping consumed by the Nav2 navigation stack with a RegulatedPurePursuitController tuned for skid-steer kinematics.
- Implemented a full state machine in `cika_task_manager` (IDLE → SELECTING → NAVIGATING → VERIFYING → PICKING) with a Nav2 `NavigateToPose` action client for closed-loop autonomous operation.

Fraud Detection MLOps Platform (Sentinel) | *Airflow, MLflow, Feast, FastAPI, PostgreSQL, MinIO, Redis, Docker*

- Built an end-to-end MLOps platform orchestrating the full ML lifecycle feature engineering, model training, serving, and monitoring across a 9-container Docker Compose stack.
- Designed Airflow DAGs for automated data ingestion, feature computation, and model training; integrated MLflow for experiment tracking, model registry, and artifact versioning with MinIO as S3-compatible storage.
- Implemented a feature store using Feast backed by PostgreSQL (offline) and Redis (online) for low-latency feature serving at inference time.
- Served the trained model via FastAPI with a Streamlit monitoring dashboard; resolved inter-container DNS and Feast materialisation issues to achieve a fully reproducible local deployment.

Spare Part Demand Forecasting | *Python, Scikit-learn, Power BI, DAX, Pandas*

- Identified and addressed an inventory forecasting gap during an oilfield services internship unreliable demand predictions were causing overstocking and stockouts affecting operational efficiency.
- Built a demand forecasting model using historical parts data and Scikit-learn; surfaced predictions through an interactive Power BI dashboard covering \$3.06M in forecasted inventory cost across 828K units.
- Dashboard includes cost breakdown by part number, top-5 high-volume inventory ranking, and granular forecast detail table enabling data-driven procurement decisions.

Car Price Prediction | *Scrapy, FastAPI, PostgreSQL, Docker, GitHub Actions, Gradio*

- Built a Scrapy web scraper to collect car listings and store them in PostgreSQL; developed regression models with hyperparameter tuning for price prediction.
- Deployed the model via FastAPI with a Gradio UI; containerised with Docker and automated CI/CD using GitHub Actions for continuous deployment.

Experience

SLB

Reservoir Performance Intern

March 2025 – Sept 2025

Port-Harcourt, Nigeria

- Built a spare part demand forecasting model and Power BI dashboard to address inventory inefficiencies forecasting 828K units and \$3.06M in procurement cost, enabling data-driven stock decisions.
- Performed functional testing of Nitrogen Pump systems, contributing to a 15% reduction in equipment downtime and improved operational safety.
- Collaborated with Mechanical and Electrical Technicians, helping resolve 90% of equipment malfunctions within service deadlines.

Seplat Energy

Information Technology Intern

August 2024 – Sept 2024

Abuja, Nigeria

- Re-imaged and configured laptops using IPv4, ensuring seamless integration into the company domain.
- Implemented and integrated new engineering tools for company employees, improving team efficiency and project outcomes.
- Supported IT infrastructure troubleshooting, streamlining processes for enhanced team performance.

Hamoye AI

Aug 2023 – Dec 2023

Data Analytics/Science Intern

Remote

- Developed Python-based data analysis pipelines using Pandas and Scikit-learn to extract insights from complex datasets, supporting data-driven decision-making across project teams.
- Integrated trained data models into existing systems and optimised data processing workflows, improving pipeline reliability and reducing processing latency.

Hamoye AI

Jun 2022 – Oct 2022

Machine Learning Operations (MLOps) Intern

Remote

- Designed and deployed containerised ML workflows using Docker and Kubernetes, establishing reproducible pipelines for model training and inference.
- Automated data pipeline testing and deployment processes, reducing manual intervention and improving integration reliability for analytics workflows in production.

Freelancing

2023 – 2024

Freelance Data Analyst / Scientist

Remote

- Delivered descriptive, inferential, and predictive analyses using Python, SPSS, and Excel for clients across multiple domains.
- Built interactive dashboards in Tableau and Power BI for real-time performance monitoring; automated preprocessing pipelines, reducing manual effort significantly.

Writing & Community

The Nerd Stack

2024 – Present

Technical Writer — Robotics & AI (Substack)

Remote

- Publish in-depth technical articles on robotics, autonomous systems, and AI covering topics such as Vision-Language-Action models, ROS2, and simulation tooling.
- Cross-post adapted content on LinkedIn, building an audience of engineers and researchers in the robotics and ML space.

Technical Skills

Languages: Python, SQL, C/C++

Robotics & Simulation: ROS2, Gazebo Ignition, RTAB-Map, Nav2, URDF, RViz2, OAK-D Lite, RPLIDAR

ML & CV: PyTorch, TensorFlow, Scikit-Learn, YOLO, OpenCV

MLOps & Data: MLflow, Airflow, Feast, Docker, Docker Compose, Kubernetes, FastAPI, PostgreSQL, Redis, MinIO, GCP

Visualisation & Analytics: Tableau, Power BI, Matplotlib, Pandas, NumPy, Plotly, Streamlit

Tools: Git, GitHub Actions, Linux (Ubuntu), VS Code