

# OLATUNJI Damilare Emmanuel

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Interest:  
AI/ML Infrastructure Engineer | MLOps  
Engineer | ML Platform Engineer

## EDUCATION

- Carnegie Mellon University**  
Master of Science, Engineering Artificial Intelligence | 3.59/4.00
- July 2023 – Dec. 2024
- Federal University of Technology, Minna, Nigeria**  
Bachelor of Technology, Pure and Applied Physics | CGPA: 4.34/5.0
- Sept. 2013 – Oct. 2018

## SELECTED RECOGNITIONS

- Top 10:** Achieved Top 10 Finalist position in the InstaDeep Hackathon at Deep Learning Indaba 2025 [\[Leaderboard\]](#)
- 2<sup>nd</sup> Runner Up** - IndabaX Rwanda 2024 Hackathon for outstanding performance in AI challenge. [\[Certificate\]](#)
- Certificate of Excellence** - Recognized by Carnegie Mellon University for exceptional leadership [\[Certificate\]](#)
- 2<sup>nd</sup> Best Poster Award** – [Recognized among 35 presenters for novel research and application potential at AFRETEC’25.](#)

## CERTIFICATIONS

- AWS Certified Cloud Practitioner** [\[Certificate\]](#)  
Foundational knowledge of AWS cloud services and cloud computing
- AWS Certified Solutions Architect – Associate** [\[Ongoing\]](#)  
Technical knowledge and skills across the breadth of AWS services

## TECHNICAL SKILLS (Core Competencies)

- Cloud & Infrastructure:** AWS (EC2, S3, SageMaker, IAM), Kubernetes, Docker
- ML Platform & Orchestration:** MLflow, ZenML, Prefect, FastAPI
- Model Serving & LLM Systems:** KServe, llm-d, LangChain
- Monitoring & Reliability:** Prometheus, Grafana, Evidently AI
- Programming:** Python, SQL, Git
- ML Frameworks:** PyTorch, DeepSpeed

## RELATED WORK EXPERIENCE

- KATAZA Technologies Limited**  
Tech Stack: Python, LangChain, Linux, Docker, CI/CD, Git, and AWS.
- Lead Consultant – Machine Learning & Cloud Operations, August 2025

- Owned the architecture, deployment, and operation of production-grade agentic AI systems, spanning model serving, orchestration, and cloud infrastructure on AWS.
- Designed and provisioned secure, scalable AWS infrastructure (EC2, S3, IAM, networking) to support both development and production workloads with high availability guarantees.
- Implemented containerized deployment pipelines using Docker and CI/CD workflows to ensure reproducible builds and reliable rollouts.

### Achievements

- Deployed and operated AI-powered customer support chatbots for the Rwanda Revenue Authority, serving real-time citizen interactions on AWS-hosted infrastructure.
- Built and deployed NLP summarization pipelines for court laws and judicial cases for the Ministry of Justice, integrating model inference services with scalable cloud backends.

### Spice Technologies

- Tech Stack** – Git, Docker, Kubernetes, Helm, ArgoCD, GitOps, AWS – EC2, ElasticBeanstalk, Vault, Prometheus, and Grafana
- DevOps - Intern | Jan.- Mar 2025
- Designed and deployed cloud-native applications using Kubernetes, Helm, and GitOps (ArgoCD) on AWS infrastructure.
  - Implemented end-to-end CI/CD pipelines with GitHub Actions, enabling automated testing, deployment, and rollback.
  - Established monitoring and logging pipelines with Prometheus, Grafana, and Loki to ensure operational visibility and system reliability.

## RESEARCH EXPERIENCE

- Carnegie Mellon University Africa**  
Research Focus: AI for Healthcare | [Dr. Carine Mukamakuza](#)
- Research Associate, AI Healthcare Research Lab | Dec. 2024 – Till date

- Coordinate research activities on the design, development, and deployment of Python-based AI pipelines for ECG/PCG signal analysis, integrating machine learning, signal processing, and human-centered design principles to support clinical decision-making in low-resource contexts.

#### Achievements (Accepted publications):

- **Q1 Journal** - **Olatunji D. E.**, Julius D. Z., Carine P.M., “[Machine Learning-Based Analysis of ECG and PCG Signals for Rheumatic Heart Disease Detection: A Scoping Review \(2015-2025\)](#)”.
- **Tier-A Conference** - Ghogomu N.T., **Olatunji D. E.**, Carine P.M., “Bridging the Trust Gap: Interpretable AI for Clinical Decision Support in Arrhythmia Diagnostics” [Win Conference on Applications of Computer Vision, 2026]
- **Tier-A Conference** - **Olatunji D. E.**, Carine P.M, Chol Boul, Julius D.Z. “Distributed Health Information Systems in Africa: Successes, Challenges, and Future Directions” [ICIM, 2026, University of Oxford, UK]

#### Upanzi Network, CMU-Africa

Research Associate (Volunteer – Cancer Research) | July – Dec. 2025

#### Research Focus: AI for Healthcare | [Prof. Assane Gueye](#)

- Analysed emerging AI methods and evidence gaps to guide the development of fair, context-aware, and responsible models for cancer detection in low-resource settings.

#### Achievements (Accepted publications):

- **Abstract Presentation** - “[Multimodal-Based Learning Generative AI in Breast Cancer Research for Africa](#)” – Carmel Prosper Sagbo, Agnes Lynn Ahabwe, Martha Kachweka, Noah Shumba, **Olatunji D. E.**, Ndeye Ndiaye. Africa HealthTech Summit 2025.

### OTHER PUBLICATIONS

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- Samuel Chol, Julius Zannu, Carine P.M., **Olatunji D. E.**, Godbright Uiso “[Architecture-Aware Explainability in ECG Analysis: A Case Study of Aortic Stenosis Detection with ResNet50 and ViT-MAE ECG](#)”. [Accepted AAAI Conference on Artificial Intelligence (AAAI-26)]
- Uwimana L., Andrew B. S., Atabonfack B. L., **Olatunji D. E.**, R. Confidence, U. Anazodo, M. Kurt, M. Adewole, D. Zhang “[Improving Glioma Segmentation Generalization on Sub-Saharan MRI Scans Using a Hybrid Deep Learning Ensemble](#)” – [Accepted Springer LNCS MICCAI BraTS Proceedings]
- Undie, E.U., Bala, J.A., Aibinu, A.M., Folorunso, T.A., and **Olatunji D. E.**, “[Effects of Electricity Generation and Supply on National Growth and Human Health: A Case Study of Nigeria.](#)” 1st ICEECE & AMF, UI (2021) [[Link](#)]

### TEACHING EXPERIENCES

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#### Carnegie Mellon University Africa

Teaching Assistant ([Introduction to Deep Learning](#)) | Dec. 2024 – May 2025

- Delivered hands-on tutorials on building end-to-end deep learning pipelines, GPU setup on HPC systems, cron-based workflow automation, and experiment tracking with Weights & Biases.
  - Supervised and mentored two international student groups (America & Africa), providing technical and methodological guidance on research projects; both groups achieved A grades. Long-Text Sentiment Analysis in Finance — fine-tuned FinGPT on earnings call transcripts to predict stock return movements.

### LEADERSHIP ACHIEVEMENTS

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- Led a multidisciplinary research team on a £2000 University of Leeds-funded project exploring e-waste valorisation in Nigeria. Designed and executed field studies, semi-structured interviews, and behavioural observations across the six geopolitical zones. Insights-informed experimental designs and policy recommendations achieved 97% of objectives despite COVID-19 disruptions.

**REFERENCES** – Available on request