CURRICULUM VITAE

Saheed Faremi

PhD-track EEG-microstate researcher · multi-domain software engineer

saheedfaremi@gmail.com · Based in Dublin, Ireland

GitHub · LinkedIn · Google Scholar · ORCID · ResearchGate

PhD researcher at University College Cork (supervised by Luca Longo) working on unsupervised deep learning for EEG signal analysis: variational autoencoders and Gaussian-mixture models for interpretable EEG microstate discovery. MSc in Computer Science (machine-learning concentration), 4.0/4.0 GPA. IEEE-published, with work under review at Brain Informatics.

EXPERIENCE

Founding engineer · Curnance

Present

Set up the engineering organisation and shipped the admin, wallet, and KYC subsystems.

- Built the Go service monorepo
- Shipped the Svelte admin and mobile wallet
- Stood up the KYC pipeline

Data Scientist · Etihuku

2021-05 → present

Data science and analytics at Etihuku, a data analytics and solutions consultancy. LLM document automation on Azure ML and SQL/Python customer analytics.

- Built an end-to-end document-generation system with large language models on Azure ML Studio, cutting manual creation time by 85% while meeting compliance requirements across three regions
- Analysed large customer datasets in SQL and Python, delivering operational dashboards and optimising transaction workflows

EDUCATION

PhD · University College Cork

In progress

Neural engineering and machine learning

Doctoral research on segmenting EEG into microstate sequences using variational autoencoders, supervised by Luca Longo at University College Cork.

MSc · Technological University Dublin

Machine learning, deep learning, data mining, visualisation, statistics

Taught master's in computer science with a machine-learning concentration; coursework in deep learning, data mining, statistical modelling, and visualisation. Completed 2025 with a 4.0/4.0 GPA (80/100).

BSc · University of Eswatini

Information technology

Bachelor of Science in Information Technology, awarded with Second Class Honours, Upper Division (2.1), GPA 4.51.

TECHNICAL SKILLS

CORE	Python · PyTorch · TensorFlow · scikit-learn · MATLAB
METHODS	Variational autoencoders · Gaussian mixture models · Custom loss functions · Transfer learning · Explainable AI · EEG signal processing
TOOLS	Git · Docker · AWS (SageMaker, S3) · MNE · NumPy · LaTeX

SELECTED FOR RESEARCH

- Doctoral research on variational deep embedding for EEG microstate discovery, with a focus on interpretability and systematic architecture search.
- Conv-VaDE: a convolutional variational deep embedding with a GMM latent prior and polarity-invariant losses, giving a learned generative manifold and probabilistic soft assignment that modified k-means does not provide.
- Multi-quadrant evaluation against modified k-means on the LEMON resting-state dataset using rank-based tests.
- IEEE-published study on machine-learning prediction of malaria risk in under-fives in Nigeria.

Interpretable EEG Microstate Discovery via Variational Deep Embedding (XAI-2026, late-breaking work)

Integrating Convolutional VAE and GMM for clustering of EEG topographic maps (Brain Informatics, under review)

MSc thesis: optimising EEG signal clustering with an unsupervised CNN-VAE and GMM

Machine Learning Models for Predicting Malaria Among Children Under Five in Nigeria (IEEE ICTAS 2024)

RECOGNITION

Google NLP Hack Series: Swahili Sentiment Analysis 2023

Google NLP Hack Series · 4th of 29

UmojaHack Africa 2023: Cryptojacking Detection 2023

UmojaHack Africa · 35th of 328 (top 11%)

Deep Learning IndabaX: Churn Prediction Challenge 2022

Deep Learning IndabaX · 3rd of 21

Winner, UNESCO India-Africa Hackathon 2022 (AGRI12) 2022

UNESCO · Ministry of Education Innovation Cell (India) · Gold medal + ₹3 lakh team prize

Tech4MentalHealth Challenge 2020

Basic Needs Basic Rights Kenya · 69th of 499 (top 14%)

SELECTED PROJECTS

Curnance

Multi-asset fintech platform spanning admin, wallet, KYC, and a Go-based service monorepo. · Founding engineer

`TypeScript · Svelte · Go · PostgreSQL · Kubernetes`

Etihuku document automation

End-to-end LLM document-generation system that cut manual creation time by 85% across three compliance regions. · Data Scientist

`Azure ML Studio · LLMs · Python · SQL`

AI-assisted Farmer Call Center

Automated voice-response system letting farmers report issues via phone, SMS, or web and receive AI-routed answers. · Team engineer, Eswatini representative

`Python · Voice AI · Twilio`

EEG microstate analysis with variational autoencoders

Source segmentation of EEG signals via variational autoencoders, including a GMM-VAE for soft clustering. · PhD researcher

`Python · PyTorch · MNE · NumPy · scikit-learn`

PUBLICATIONS

Saheed Faremi, Luca Longo "Integrating Convolutional Variational Autoencoders and the Gaussian Mixture Model for efficient manifold learning and clustering of spatially preserved EEG topographic maps". *Brain Informatics (under review),* 2026.

Saheed Faremi, Andrea Visentin, Luca Longo "Interpretable EEG Microstate Discovery via Variational Deep Embedding: A Systematic Architecture Search with Multi-Quadrant Evaluation". *XAI 2026 (Late-breaking work + Doctoral Consortium track), Fortaleza, Brazil. arXiv preprint.,* 2026.

Saheed Faremi "Explainable Disentangled Representation Learning of Recurring Brain Activation Patterns via Variational Autoencoders". *XAI World Conference 2025, Doctoral Proposals track,* 2025.

Akinpelumi Saheed Faremi, Boluwaji Akinnuwesi, Elliot Mbunge, Petros M. Mashwama, Stephen Fashoto, Polite Zenzo Ncube, John Batani, Shamsudeen Ademola Sanni, Yinusa A. Faremi, Andile Metfula "Machine Learning Models for Identifying Factors Influencing and Predicting Malaria Among Children Under Five Years in Nigeria". *IEEE ICTAS 2024,* 2024. doi:10.1109/ICTAS59620.2024.10507142

TALKS

Machine Learning Models for Predicting Malaria in Nigerian Children Under Five · IEEE ICTAS 2024, 2024