

Oluwatimilehin Emmanuel Owolabi

Also appears as Timilehin or Timi

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Education

Covenant University

B.Eng. in Electrical Engineering

Ogun, Nigeria

September 2020 – August 2025

- GPA: 4.85/5.00

- Undergraduate Thesis: [Development of Quadrotors with Adaptive Control for Autonomous Swarm Operations](#)

Research Interests

Self-improving embodied AI; meta-reinforcement learning; robot foundation models; dexterous manipulation and agile mobility for humanoid robots; learning and model-based control; stability and safety in data driven systems.

Research Experience

University of Oxford — Dr. Daniel Omeiza, Oxford Robotics Institute

Oxford, United Kingdom (Remote)

Undergraduate Research Assistant

March 2024 – September 2024

- Analyzed the Lyft Level 5 dataset to estimate multi-agent vehicle positions and velocities, detect lane-change maneuvers, and improve explainability of autonomous driving decisions in complex traffic scenarios using both ego- and agent-centric representations.
- Pioneered application of subset-scan algorithm on Graph Neural Networks to identify statistically significant anomalies in datasets.

Google Developer Groups on Campus

Ogun, Nigeria

Robotics Research Team Lead

September 2024 – Present

- Led the replication of Stanford's ALOHA paper in simulation, using OpenVLA-OFT (an improved vision-language-action model) to demonstrate bimanual robotic manipulation and train students in advanced embodied AI methods.
- Developed vision-based manipulation policies using DeepMind Control Suite and MuJoCo, achieving robust box-picking performance through end-to-end learning in high-fidelity simulation environments with JAX optimization.
- Prototyped a low-cost 3D-printed manipulator for object sorting, matching the performance of the WidowX 250 S at just 2.5% of its cost while supervising interdisciplinary teams across mechanical, electrical, and software domains.
- Mentored 16 students on critical review and implementation of robotics research papers, deepening their understanding and improving replication accuracy.

Covenant University Centre for Research, Innovation and Discovery

Ogun, Nigeria

Research Student

September 2024 – Present

- Collaborated on multidisciplinary AI research projects including autonomous garbage collection systems and epidemiological prediction models for pandemic preparedness in Sub-Saharan Africa using machine learning approaches.
- Developed intelligent research discovery system using natural language processing to automatically parse, summarize, and cluster academic literature from Scopus alerts, significantly improving research workflow efficiency.

Zummit Africa

Lagos, Nigeria

Machine Learning Research Intern

April 2023 – May 2024

- Developed a brain tumor segmentation application, achieving 95% accuracy using U-Net and medical imaging datasets.

Peer-Reviewed Publications (Journals and Conferences)

A. Awelewa, N. K. Ojo, T. Abimbola-Oladejo, **T. Owolabi**, A. Saha and V. Srivastava, "Fuzzy-PID Controller for Liquid Level Control of Tank Systems", IEEE International Conference on Science, Engineering and Business for Driving Sustainable Development Goals, 2025.

T. E. Somefun, **T. Owolabi**, and O. M. Longe, "[Practical Trade-offs in Neural Network Optimization: Brute Force Search and Gradient Descent](#)", Engineering Research Express, 2025.

O. Idowu, H. Hu, A. Akinwale, A. Ilori, Z. Xingze, Y. Wang, A. Rasheed, and **T. Owolabi**, "[Enhancing Radiological Imaging for Better Healthcare Outcomes Through High Performance Hybrid Approach](#)", ASRIC Journal on Engineering Sciences, 2024.

T. E. Somefun, N. Elijah, A. E. Igho-Orere, **T. Owolabi**, C. Somefun and S. Ongbali, "[Energy Optimization Algorithm for Reducing Energy Consumption in a Smart Home](#)", International Conference on Multidisciplinary Engineering and Applied Science (ICMEAS), 2023.

Teaching Experience

Association of Professional Women Engineers of Nigeria	Lagos, Nigeria
Machine Learning Tutor	April 2024 – Present
Project Cage Technologies	Lagos, Nigeria
Robotics Instructor	May 2024 – July 2024

Awards and Honors

Finalist, Pan-African Robotics Competition	2024
Third Place, DSN Covenant University Hackathon	2022
Founder’s Award, Best WASSCE Result, Wellspring College	2021
Valedictorian, Department of Science, Wellspring College	2020
Salutatorian, Overall Graduating Class, Wellspring College	2020
Lux Award, Most Intellectual Student, Wellspring College	2020

Core Skills

Programming & Systems: Python, C++ , MATLAB, Git, Linux, Docker, AWS, Raspberry Pi, STM32, ESP32
Robotics & Control: ROS2, MuJoCo, JAX, Model Predictive Control, Optimal Control, Sensor Fusion
Machine Learning & AI: PyTorch, TensorFlow, JAX, Scikit-learn, OpenCV, Hugging Face, MLflow, LangChain, LangGraph
Personal Skills: Leadership, Hyper-focus, Resilience, Growth Mindset, Teamwork

Selected Projects

Autonomous Delivery Quadcopter	Ongoing
• Designed and constructed a custom ESP32-based flight controller hardware and software.	
Action Recognition and Tracking System	2023
• Developed an action-recognition and tracking system using a hybrid CNN-LSTM model for monitoring and logging patient actions, detecting falls, and issuing emergency alerts, integrated with a PID controller for subject tracking.	

Selected Presentations and Invited Talks

AI: Our Current Reality and Future Trajectory
Nigerian Society of Engineers (NSE), August 2024
Deep Learning: Neural Networks
Association of Professional Women Engineers of Nigeria (APWEN), April 2024

Selected Certifications

Deep Learning Specialization Certificate	Coursera / DeepLearning.AI
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Professional Experience

Scrella	Lagos, Nigeria
Lead Machine Learning Engineer	July 2024 – Present
• Architected and deployed production-scale MLOps pipelines optimizing critical business workflows.	
• Implemented Vision Language Models for confidential video analysis, accelerating decision-making processes.	
Peak Fiction	Belfast, Northern Ireland (Remote)
Machine Learning Intern	April 2024 – July 2024
• Utilized Latent Diffusion Models to create high-quality comic book scenes.	
• Engineered an Image Generation workflow using ComfyUI, increasing productivity by 50%.	
Schneider Electric	Lagos, Nigeria
Sustainability Intern	August 2023 – October 2023
• Conducted robotics workshops for young students on building a simple self-driving car.	
• Collaborated with African schools and NGOs for STEM, contributing to a goal of empowering 1 million youths globally.	
• Assisted in analyzing and approving NGO support budgets, each totaling over \$60,000.	

Leadership Experience

Association of Electrical and Information Engineering Students	Ogun, Nigeria
President	September 2024 – Present
• Led a 20-member executive team in coordinating projects and competitions for over 2,000 students.	
• Launched a student mentorship program pairing juniors with seniors for academic and career guidance.	