Oluwatimilehin Emmanuel Owolabi

Also appears as Timilehin or Timi

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Education

Covenant University — Ogun, Nigeria
B.Eng. in Electrical Engineering — September 2020 – August 2025
- **GPA:** 4.85/5.00
- **Thesis:** Development of Quadrotors with Adaptive Control for Autonomous Swarm Operations

Research Interests

Hybrid learning and model-based control; meta-reinforcement learning; mobility and manipulation for legged and aerial robots; stability and safety in data driven systems; experience-driven algorithms toward artificial general intelligence.

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.
- Implemented 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
- Trained a vision-based manipulation policy using DeepMind Control Suite, MuJoCo Playground, and JAX, achieving reliable box-picking performance in simulation.
- 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; concurrently supervised mechanical, electrical, and software teams.
- Led the replication of the ALOHA paper in simulation, using OpenVLA-OFT to teach students bimanual manipulation with vision-language-action models.
- 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
- Assisted with doctoral, master's, and undergraduate research projects on artificial intelligence and robotics, including an autonomous garbage-picking robot and a machine learning model for pandemic prediction in African countries.
- Developed an NLP program to parse, summarize, and cluster Scopus alert emails, improving research discoverability.

Zummit Africa — Lagos, Nigeria
Machine Learning Research Intern — April 2023 – May 2024
- Led a brain tumor segmentation project, 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", Accepted for presentation at the 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.

Professional Experience

Scrella Lagos, Nigeria
Lead Machine Learning Engineer July 2024 – Present
- Designed and deployed machine learning operations pipelines to optimize workflow efficiency.
- Used Vision Language Models for confidential video analysis, improving workers decision speed.

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.

Teaching Experience

Association of Professional Women Engineers of Nigeria Lagos, Nigeria
Machine Learning Tutor April 2024 – Present
- Delivered in-depth machine learning classes to 27 female graduate and undergraduate students.

Project Cage Technologies Lagos, Nigeria
Robotics Instructor May 2024 – July 2024
- Led the senior robotics team to the finals of the Pan African Robotics Competition Stars League 2024.

Awards and Honors

Finalist, Pan-African Robotics Competition 2024
Third Place, DSN Covenant University Hackathon ($30) 2022
Founder's Award, Best WASSCE Result, Wellspring College ($50) 2021
Valedictorian, Department of Science, Wellspring College ($100) 2020
Salutatorian, Overall Graduating Class, Wellspring College ($100) 2020
Lux Award, Most Intellectual Student, Wellspring College 2020

Selected Projects

Autonomous Delivery Quadcopter Ongoing
- Designed and contructed 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

Core Skills

Technical Skills: Python, C++, MATLAB, ROS2, PyTorch, Tensorflow, MuJoCo, JAX, Raspberry Pi, STM32, ESP32
Personal Skills: Leadership, Hyper-focus, Hardwork, Resilience, Growth Mindset, Teamwork

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.