

ENGR. DR. OLUKAYODE .A. ONASOGA

REng(COREN), PhD, MNSE, PMEC, CSM

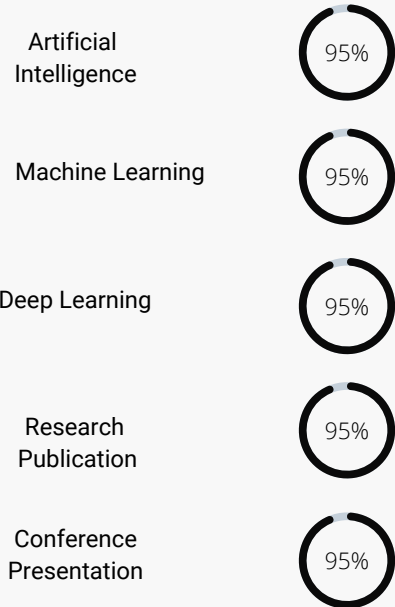
CONTACT

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KEY COMPETENCIES

- Management Skills
- Creativity
- Digital Marketing
- Negotiation
- Time Management
- Critical Thinking
- Problem Solving
- Leadership and Communication
- Motivation and Decision Making
- Team Work and Team Building
- Planning

SKILLS



PROJECTS

- **Closed-Loop Microhydro System(CLMS)**
 - Groundbreaking approach to sustainable energy generation. This innovative system utilizes a water booster pump to create a high-pressure water jet that drives a Pelton turbine, generating electricity through a continuous recycling process. By combining efficiency, sustainability, and compact design, CLMS offers a promising solution for various power generation needs, from off-grid locations to industrial applications.

PROFILE

Olukayode has his PhD in Computer Science, specializing in AI-driven solutions, particularly focusing on deep learning, fuzzy inference systems, multimodal sentiment analysis, and AI explainability – a critical aspect in developing transparent AI systems. Olukayode shows areas of competencies with publications in renowned scholarly journals. He is adept at carrying out effective research and key presentations in international conferences, his proficiencies include knowledge dissemination and spearheading technological advancements. Olukayode possesses several strengths that range from self and team motivation through to dedication to assigned duties, commitment, and prompt delivery of assigned tasks with little supervision. Olukayode acquires prompt punctuality and time management. Olukayode tends to use acquired skills from various working experiences in the advancement of task performance.

AREAS OF EXPERTISE

- Deep Learning
- Artificial Intelligence (AI)
- Sentiment Analysis - Multimodal
- Natural Language Processing (NLP)
- Smart Technology
- Smart Aquaculture Systems
- Engineering - Electrical/ Computing
- Biomedical Signaling
- Fiber Optics
- Computer Vision & Image Analysis
- Fuzzy Inference Systems

WORK EXPERIENCE

Research Associate
Data Science Research Lab, School of Computing, Universiti Utara Malaysia (UUM)

- Engineered cutting-edge, demand-driven research project titled “Smart Aquaculture through Machine Learning and IoT”, funded by the Malaysian Department of Fisheries, focusing on scalable AI and IoT solutions to enhance aquatic health monitoring and farm efficiency.
- Designed, trained, and optimized advanced Deep Learning models, with > 90% accuracy, for real-time detection of white spot syndrome and other aquaculture diseases using image-based and multi-sensor data.
- Provided technical leadership in the architecture and integration of low-cost sensor networks and embedded systems for field deployment, enabling remote monitoring and data acquisition in aquaculture environments.
- Developed data pipelines and pre-processing frameworks to manage large, heterogeneous datasets from image, sensor, and environmental sources; conducted statistical analyses and model evaluations to ensure robustness and reliability, achieving a 20% increase in operational efficiency.
- Represented the research team in high-level meetings with government and industry stakeholders, translating technical findings into actionable insights and aligning solutions with field needs.
- Mentored undergraduate and postgraduate research assistants, guiding their development in machine learning, data engineering, and scientific writing; coordinated task assignments and research progress reviews.
- Co-authored technical reports, academic journal articles, and conference proceedings; actively contributed to the visibility and scientific impact of the lab’s work through public presentations and collaborative outputs.

PROJECTS

- **Day-Lighting by Optical Fiber:**
 - Day-Lighting by Optical Fiber is a hybrid system that sends natural sunlight indoors using fiber optics, with a solar-powered electric backup. A dual-axis solar tracker collects and filters sunlight, which then travels through multi-mode fibers into interior spaces. The system achieved 99.92% efficiency, surpassing electric lighting at 95.75% and providing up to 420 lux, which is four times brighter than traditional systems. The dual-axis tracking improved energy collection by 57% compared to fixed systems. This design lowers electricity use, prevents heat gain from IR/UV rays, and offers continuous, high-quality lighting, making it perfect for sustainable, energy-efficient building applications.
- **Food Security Analysis Using Convolutional Neural Networks (CNN) for Text Classification:**
 - Developed a text classification model using Convolutional Neural Networks (CNN) to analyze and classify text data related to food security
 - Enhanced food security insights by analyzing patterns and correlations in the classified data, aiding in decision-making for policy development and emergency response.
- **Image Classification using CNN:**
 - Developed a TensorFlow-based CNN model, attaining an 88% accuracy rate in image classification and reducing training time by 15% with optimized batch processing using the MOSI dataset.
 - Leveraged a pre-trained LeNet-5 network, achieving image recognition with precision (92%), recall (91%), and an F1-score (93%), assessed via a confusion matrix.

EDUCATION

Doctor of Philosophy (PhD)

Universiti Utara Malaysia (UUM), Kedah, Malaysia

Covenant University Ota, Ogun State, Nigeria.

Masters Engineering,
Information and Communication Engineering

Olabisi Onabanjo University College of Engineering and Environmental Studies. Ibogun, Ogun State, Nigeria.

Bachelor of Science, Electrical/ Electronics
Engineering
BSc (Hons) Second Class Upper Division

Petroleum Training Institute Warri, Delta State, Nigeria

National Diploma,
Electrical Electronics Engineering Technology

WORK EXPERIENCE

Lecturing / Academic Supervisor / Project Evaluator - Master's & PhD
Data Science Research Lab, School of Computing, Universiti Utara
Malaysia (UUM)

- Guest Speaker - Universitas Islam Riau, Indonesia
 - SLR Made Easy: Organise, Write and Cite with Mendeley
- STIQ6014 Research Methodology in Computing Course
 - Using Mendeley to Make Systematic Literature Reviews Easier and Faster
 - Exploring the Adoption and Usage Patterns of Mendeley Reference Manager Postgraduate
- STIN5014 Artificial Intelligence Course
 - Deep Dive into CNN Architecture and Machine Learning: Processes, Trends and Practical Coding
 - Deep Learning and its Application
- Master's Project Evaluator
 - Project in Computing, MSc Information Technology and Computer Science

Paper Reviewer and Conference Organizer

- The 1st International Conference on Emerging Systems and Advanced Technology (ICoESAT 2025), 14 & 15 April 2025, Hybrid . ICoESAT 2025 Hosted by Gulf Colleges Saudi Arabia.
- Digital Zone: Jurnal Teknologi Informasi dan Komunikasi, SINTA 3, Indonesia
- The 2nd IEEE International Conference on Fundamental Applied Sciences and Technology (ICoFAST 2024). 2 - 3 July, 2024, Mukalla, Hadhramout, Yemen.
- The 5th ICAN Malaysia International Conference on Accounting and Finance (ICAF-IMDS), Stagflation and Digital Transformation: What do they matter for Business Sustainability? 1 - 4 May 2023, The Everly Putrajaya, Malaysia.
- The 4th ICAN Malaysia International Conference on Accounting and Finance (ICAF-IMDS) Building Economic Resilience: Navigating Turbulent Times through Digital Transformation. 21 - 24 March 2022, Adya Hotel, Kuah, Langkawi Island, Malaysia.
- The 3rd ICAN Malaysia International Conference on Accounting and Finance (ICAF-IMDS) Economy and Business Resilience in the Pandemic Era: A Drive for Digital Transformation. 24 -25 March 2021, Kedah, Malaysia (Virtual Conference)

Data Analyst

Data Science Research Lab, School of Computing, Universiti Utara Malaysia (UUM)

- Coordinated the development of an advanced TensorFlow-based Fuzzy layered CNN model for Multimodal Sentiment Analysis, attaining an accuracy rate greater than 90% and a reduction of trainable parameters by 30% with optimized batch processing, achieving a 15% increase in operational efficiency..
- Developed and enhanced the interpretability of the model's predictions by using fuzzy reasoning to explain decisions, particularly in scenarios where sentiment is subjective and complex.

EXPERTISE

- Website Development
- Managerial and Administrative Skills
- Articulate communicator with good interpersonal skills
- Ability to take up challenges and duties to achieve set goals
- Ability to strategize to penetrate the market effectively
- Ability to function effectively with little or no supervision
- Ability to make informed projections of market trends
- Over 28 years of Driving experience with a valid driver's license
- Software and hardware engineering.
- Computer Appreciation
- Spreadsheet application
- Desktop publishing
- Graphics Designing

PROFESSIONAL BODIES

- International Association of Engineers (IAENG)
- The Council for the Regulation of Engineering in Nigeria (COREN)
- The Nigerian Society of Engineers (NSE)
- Microsoft Internet Security and Acceleration Server 2006, Configuring MICROSOFT
- Executive Member, ICAN Malaysia District Society

CERTIFICATES

- Certified ScrumMaster®
- Project Management Essentials Certified
- Deep Learning with Python
- Big Data and AI
- Data Visualization in Tableau
- Data Visualization with Power BI
- Python for Data Analysis

CAPACITY BUILDING / SUMMIT / EXHIBITION

- Appointment as Representative of Universiti Utara Malaysia (UUM) to ASEAN AI Malaysia Summit 2025

- Initiated the development of a text classification model using Convolution Neural Networks (CNN), with an accuracy of over 90%, to analyze text data related to food security.
- Enhanced food security insights by analysing patterns and correlations in the classified data, aiding in decision-making for policy development and emergency response.
- Led the development of a TensorFlow-based CNN model, attaining an 89% accuracy rate in image classification and reducing training time by 15% with optimized batch processing.
- Leveraged a pre-trained LeNet-5 network, achieving image recognition with precision(92%), recall(91%), and an F1-score (93%), assessed via a confusion matrix.
- Contributed to undergraduate and postgraduate program enhancement, ensuring alignment with industry standards.
- Evaluated and supervised MSc students, leading to impactful publications and industry placements.
- Participated and assisted in writing grant proposals to secure funding and align research objectives with grant requirements.
- Served on departmental and faculty committees, contributing to governance, accreditation, and student mentorship programs.
- Published high-impact research papers in peer-reviewed journals.
- Delivered courses in Machine Learning, Deep Learning, and AI Ethics, achieving over 90%+, high student satisfaction ratings.

Supervisor

Technical Service Engineer

Opex Oil and Gas Resources Limited
Alausa Power Plant Limited
Lagos State, Nigeria

- Coordinating and liaising with multi-disciplinary teams including project managers, engineers, consultants enabling speedy resolutions to technical problems.
 - Handles PRMS Commissioning and Installation Tasks.
 - Gas Deodorizing System.
 - Carried out Pipeline Integrity Tests and Leak Surveys.
 - Prepares Periodic Gas and Maintenance Reports for the Technical Services Manager's review and approval; highlights issues and provides suggestions for addressing problems noted/complaints from Consumers.
 - Actively participates with the team during utility Maintenance and Repair Works.
 - Collate and Analyses Equipment Data for Proactive and effective Maintenance and Planning.
 - Gas Chromatographs
 - Gas Pipeline SCADA (Supervisory Control and Data Acquisition)
 - Operations and Maintenance Engineer (Team Lead), supervises all activities carried out by the operations team.
 - Technical Officers Supervision, monitored, maintenance (preventive and corrective), and repair of two (2) 3.3MW Jenbacher gas-fired generating sets and (2) MTU Diesel fueled Generating sets, Diesel storage tank dipping, back-to-back shift scheduling, PRMS metering, facility management and maintenance, operation report generation and submission for approval.
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- Invitation for Presentation of Marine Fish Disease Detection Project using AI-Prototype "Aquaspot AI" during the Programme for Improving the Capacity of the Fisheries Biosecurity Certification Scheme: Kedah State Mygap Certification.

INNOVATION & PROTOTYPES

- AquaSpot AI - Principal Investigator
 - Smart aquaculture system using Deep Learning and IoT, deployed in MYCAP-certified environments, recognized at ASEAN AI Summit and Dubai Future Prototypes 2025.

REFERENCES

References available upon request

- Ensure that there is always a constant power supply to the customer (Lagos State Government Secretariat Alausa).
- Ensure that there is always a constant power supply to the customer (Lagos State Water Corporation).
- Ensure near-zero downtime of the power plant.
- Send Daily, Weekly, and Monthly Captive Power Operations reports to the Line Manager and the entire management.
- Ensure that ALL employees and contractors on-site strictly adhere to all safety procedures.
- Report incidents and notify the EHSSQ department of all Hazard-related issues within the facility.

National Youth Service Corps

Driving Instructor and Trainer

Havilah Driving School
Kano State, Nigeria

- Preparing lessons that are tailored to students' needs.
- Providing instruction on the parts and functions of a vehicle, and on-road regulations.
- Teaching practical skills related to all aspects of driving.
- Helping students to develop confidence in their driving skills.
- Gaining control of the vehicle during emergency situations.
- Calming students who are in distress.
- Documenting and reporting on students' progress.
- Informing students when they are ready to take the driver's test.
- Reporting all accidents to the Head of the driving school.

Project Engineer

Commint Nigeria Limited
Lagos State, Nigeria

- 1Nos. 400KVA and 1Nos. 800KVA Caterpillar Generator & 5 MVA Transformer
- Street Lighting
- Fire Alarm System
- CCTV, PABX, Intercom and data communications network

Industrial Trainee

iTECO (Nig.) Ltd. (a subsidiary of TELNET NIG. LTD,
Victoria Island Lagos State, Nigeria

- Configuration and management of Cisco devices.
- Network management for Central Bank of Nigeria, Marina Lagos.

Industrial Trainee

Nigerian Gas Company (a subsidiary of NNPC), Warri, Delta State, Nigeria

- Maintenance of power facilities and maintenance of security lighting systems.
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