

AGU JONAS ONYINYECHI

Aerospace Enthusiast || Fluid & Thermal Systems || Fire Safety Systems Design| Mechanical Engineer

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EDUCATION

Federal University of Technology, Akure (FUTA) - Ondo state, Nigeria.

Awarded November, 2024

Bachelor of Science - Mechanical Engineering

GPA: 4.54/5

Honors Dissertation Title: “*Development of an Automatic Fire Outbreak Management System for a Single-Room Industrial Workshop*”

Relevant Courses: CAD and Finite Element Analysis, Fluid Mechanics & Aerodynamics, Combustion & Propulsion, Thermodynamics in High-Speed & Enclosed Environments, Sensors and Microcontrollers in Control Systems.

RESEARCH INTEREST

- Aerospace Systems Design
- Heat Transfer & Combustion Systems
- Computational Fluid dynamics
- Robotics and automation

RESEARCH EXPERIENCES

Undergraduate Research Project

Feb. 2024 – Sept. 2024

Federal University of Technology Akure

Project Title: “*Development of an Automatic Fire Outbreak Management System for a Single Room Industrial Workshop*”

Advisor: Prof. Mrs C.O Ijagbemi

Synopsis: Developed a real-time fire detection system using a camera module integrated with a NodeMCU controller. The system was trained on tens of thousands of fire images using a convolutional neural network (CNN) model to recognize fire in indoor environments.

Duties: Data collection and preprocessing, machine learning model training, system modeling, sensor integration, algorithm design, hardware implementation, documentation, and performance evaluation.

Volunteer Research Intern

Sep. 2024 – Oct. 2024

Centre for Space Research and Applications (CESRA), FUTA

Project Title: “*Remote Sensing and Crop Monitoring using Open-Source Satellite Data*”

Advisor: Dr. O.M Olabanji

Synopsis: Contributed to a pilot study on assessing crop health using Sentinel-2 satellite imagery in Ondo State. Organized satellite datasets, performed NDVI analysis, and maintained research documentation. Participated in the 2022 CESRA Workshop on Remote Sensing, exploring the role of Earth observation data in agricultural monitoring.

Duties: Data organization, basic geospatial analysis, literature review, technical reporting, and workshop support.

TEACHING EXPERIENCE

NIMechE, FUTA

2022 – 2024

Peer Academic Tutor & Tutorial Coordinator.

- Led peer academic support programs for mechanical engineering students from 300 to 500 level.
- Taught core courses including MTS 315 & MTS 316 (Engineering Mathematics), MEE 403 (Mechanical Vibrations), MEE 405 (Control Systems), and Fluid Mechanics.

- Organized regular tutorial sessions, created practice materials, and facilitated exam preparation workshops.
- Mentored lower-level students, promoted academic excellence, and collaborated with other tutors to improve student outcomes.

INDUSTRY EXPERIENCE

Nigerian Breweries, Lagos

Dec. 2023 – Feb. 2024

Services: Maintenance Engineering & Fire Safety Systems Service

Position: Plant Operations and Maintenance Intern

- Co-installed mercury glass-based fire suppression systems for a 5,000+ sqm warehouse.
- Analyzed and optimized pump systems, improving performance efficiency by 15%.
- Contributed to piping layout and valve specification within fire safety design standards.

Karbak Ventures Ltd, Lagos, Nigeria.

Sept 2023 – Nov 2023

Services: Site Engineering & Structural Services

Position Held: Structural and Rack Installation Intern

- Drafted structural layout plans in AutoCAD for three major client deployments..
- Conducted load simulations using ANSYS for rack safety analysis.
- Ensured ISO 9001-compliant installation of warehouse structural systems.
- Supported the QA/QC team by documenting safety checks and load test data for client reporting and compliance certification.

Berliac Cables, Lagos, Nigeria

Jun 2022 – Jul 2022

Product: Manufacturing Support & Quality Control

Position: Production Intern – Electrical Equipment Manufacturing

- Supported assembly of cable and electrical components under the supervision of senior technicians, adhering to IEC safety standards.
- Conducted end-of-line testing for cable resistance and continuity, identifying and reporting faults that helped reduce production errors by 10%.
- Maintained documentation for inventory movement, helping streamline material requisition and minimizing delays in the production process.
- Assisted in implementing a 5S lean production model to improve workflow efficiency and reduce tool retrieval times on the floor

CONFERENCES

2022 17th Academic Conference, themed “*Transformation Agenda for Third World Communities through Multidisciplinary Approach*”, organized by Cambridge Nigerian Publications, FUTA. 28th February.

2023 International Conference of the Nigerian Institution of Mechanical Engineers (NIMechE), themed “*The Role of Mechanical Engineering and Supportive Finance in Achieving Growth in the Manufacturing Sector*”, held at Monarchs Luxury Palace Hotel, Ilorin. 17th – 20th October.

2023 23rd Academic Conference, themed “*Sub-Sahara African Awakening for 21st Century Challenges and Opportunities through Multidisciplinary Approach*”, African Scholar Publications, Federal University of Technology Akure (FUTA). 30th September.

2023 Seminar on “*The Impact of Digitalization on Mechanical Engineering*”, organized by the Nigerian Institution of Mechanical Engineers (FUTA Chapter). 4th August.

COMMUNITY SERVICE AND VOLUNTEERING

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| Front Desk/Registration Assistant ONDEA 2024 Entrepreneurship summit | April, 2024 |
| <ul style="list-style-type: none">• Provided attendee assistance and coordinated registration activities at the summit. | |

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| Registration Officer Linkedin Local Akure | May, 2022 |
| <ul style="list-style-type: none">• Managed event registration and check-ins for 150+ attendees. | |

CORE SKILLS

- Engineering Tools: AutoCAD (2D/3D), ANSYS Workbench, MATLAB
 - Programming: Python, JavaScript, Rust
 - Simulation & Modeling, Data Visualization.
 - Microsoft Office (Excel, Word, PowerPoint, Access).
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AWARDS AND HONOURS

- Top 2% Finalist in the NCDMB National Essay Competition (2022); placed 11th out of over 6,000 entries nationwide for an essay on “Research and Development as a Key Lever for Local Content Implementation in Nigeria’s Oil and Gas Industry.”
 - Chevron/Agbami Undergraduate Scholarship Recipient (2020–2024), awarded to top-performing engineering and medical students for academic excellence.
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PROFESSIONAL MEMBERSHIP/AFFILIATIONS

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| Graduate Member, Nigerian Society of Engineers (NSE) | Nov.2024 – till date |
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INTERESTS AND ACTIVITIES

Aerospace innovation, Remote sensing, Environmental sustainability, Space systems, Machine learning, Report writing, Traveling, Technical documentation, Science outreach.

