

OSSAI UCHE GODSON

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EXECUTIVE SUMMARY

Industrial Physics graduate with a strong foundation in electronics, computational modeling, and condensed matter research. Experienced in leading experimental investigations and simulation-driven studies involving electromagnet design, materials corrosion, 2D semiconductors, and temperature-dependent metallic behavior. Skilled in Python programming, first-principles calculations (Quantum ESPRESSO), crystal and defect engineering (ASE), and software development logic. Former Departmental President of the National Association of Physics Students (2022–2023), where I coordinated academic programs, technical training initiatives, and collaborative research activities. Certified in academic service and front-end development, with a growing interest in scalable computational physics workflows, semiconductor device physics, and nanoscale materials analysis. Driven by curiosity, precision, and the development of tools that bridge physics research and modern electronic applications.

CORE COMPETENCIES

Computational & Modelling:

- Python (NumPy, Matplotlib)
- Density Functional Theory (DFT)
- Quantum ESPRESSO
- Atomic Simulation Environment (ASE)

Electronics & Instrumentation:

Circuit assembly

- Electromagnetic system design
- Oscilloscope and multimeter usage

- Signal generation and measurement fundamentals.

Arduino & Microcontrollers:

- Arduino Circuit Design
- Embedded-C Firmware Development
- Sensor Interfacing (ADC)
- UART, I²C, SPI Communication
- LCD & Serial Display Integration
- Real-Time Control Systems

Scientific & Documentation:

- LaTeX
- Data analysis & visualization
- Literature review
- Technical report writing
- Research communication.

EDUCATION

Bachelor's in Physics (with Electronics)

Federal University of Technology, Owerri

2020 – 2025

Relevant Coursework:

Solid State Physics

- Semiconductor Physics
- Quantum Mechanics
- Electricity and Electromagnetism
- Statistical Mechanics

- Electronics & Instrumentation.

West Africa Senior School Certificate Examination (WASSCE)

Model Boys' Senior Secondary School, Omoku, Rivers State

First School Leaving Certificate (FSLC)

Cambridge Paradise Universal Schools, Omoku, Rivers State

PROFESSIONAL CERTIFICATIONS

- Certificate of Service — President, NAPS (2022/2023) | 2024
(Department of Physics, Federal University of Technology, Owerri)
- Certificate of Completion — Front-End Development | 2024
(Edmoss Global Venture)

RESEARCH EXPERIENCE

Design and Construction of a DC Electromagnet with Variable Output and Display to Investigate the Effect of Magnetic Field on Corrosion in Materials

Undergraduate Thesis | **Group Leader** | 2024–2025

- Led a supervised experimental investigation into magnetic-field-dependent corrosion behavior of metallic samples.
- Designed and assembled DC electromagnet circuitry with variable current control and real-time voltage/current display module.
- Managed system calibration to ensure magnetic field stability during exposure tests.
- Oversaw team workflow, materials testing, measurement logging, and final documentation.
Core Skills: Electromagnet design • Instrumentation • Sensor interfacing • Experimental data logging • Technical leadership.

Defect Engineering in 2D Monolayered TMDCs

Independent Computational Study | 2024–2025

- Performed crystal cleaving, supercell generation, and defect modelling (chalcogen vacancies and hydrogen substitution) using ASE.
- Executed first-principles DFT calculations using Quantum ESPRESSO, including SCF, structural relaxation, and density of states workflows.
- Designed reproducible simulation pipelines for modified 2D materials.
Core Skills: DFT • ASE • QE input scripting • Defect modelling • Structure relaxation • DOS analysis • Linux environment.

Thermal Modulation Study of Copper

Independent Computational Study | 2024

- Performed temperature-dependent structural relaxations and total-energy analysis of crystalline Cu using Quantum ESPRESSO.
- Analysed thermal effects on lattice stability as a proxy for electronic/structural modulation behavior.

Core Skills: QE automation • Thermal modelling • Total-energy analysis • DOS pipeline logic.

TELUS International AI – Data Rater / Annotator

Remote | Jan 2020 – Jun 2023

- Labeled images and video data for object detection and segmentation projects
- Participated in model training feedback loops for computer vision models
- Annotated Spanish search engine results and provided user intent classifications

One forma – Freelance Linguistic Annotator

Remote | March 2024 – Oct 2024

- Worked on text classification, translation alignment, and corpus tagging tasks
- Focused on projects involving conversational AI and voice assistants
- Annotated large-scale datasets for speech recognition, sentiment analysis, and named entity recognition (NER) in Spanish and English

INTERNSHIP / WORK EXPERIENCE

Front-End Development Intern

Edmoss Global Venture | 2024

- Trained in HTML, CSS, and JavaScript for responsive UI and interactive logic.
 - Developed interface components and client-side behavior flows.
 - Practiced structured problem-solving coding relevant to research workflow automation.
- Core Skills:** HTML • CSS • JavaScript • UI logic • Modular coding discipline.

LEADERSHIP

President, National Association of Physics Students (2022/2023)

Certified Service | 2024

- Led academic programs, student development seminars, and departmental community engagement events.
- Coordinated large student cohorts and organized scientific learning activities.

PROJECTS

- Design and Construction of a DC electromagnet to investigate the rate of corrosion of Cu coupons in (HNO₃) in magnetic field (Undergraduate Thesis).
- Temperature-Dependent DFT Modelling of Copper
- Defect-Engineered 2D TMDC Simulation Workflow (ASE + QE)

REFERENCES

Available upon request.