

Ernest Tooohukwu Samuel



Portfolio

Mechatronics Engineer

I am an innovative and diligent cross-disciplined Engineering degree holder with a diverse background. I have spent six months in the construction industry as a Mechanical Engineer, followed by a year in the renewable energy sector, specializing in Solar PV as an Operations and Maintenance Engineer. In addition to my technical skills, I bring one year of experience in Finance Management and fundraising for TedX organization. I am currently leveraging my analytical abilities in a 6-month and counting, role as a Data Analyst for an AI startup company. My career journey is defined by my commitment to sustainable innovation, process optimisation, and data-driven decision-making across multiple domains.

Contact

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- Ashesi University, Berekuso, Eastern region, Ghana

Education

MSC. MECHATRONICS ENGINEERING

Ashesi University,
Ghana
January 2023 – Present

Control Systems,
International
Environmental
Politics, Leading
Teams, Renewable
Energy Technologies,
Machine Learning,
Manufacturing
Processes, Systems
Identification and
Modeling, Robotics
and Mechatronics,
Investment appraisal
and cost-effectiveness
analysis / Corporate

Experience

DATA PREPROCESSING ENGINEER

NSMQ AI, ACCRA, GHANA
April 2023 – Present

- Developing and implementing data preprocessing pipelines for AI training using various techniques, including data scraping, video cropping, and textbook parsing.
- Developing and Implementing Python scripts to parse textbooks into a well-structured JSON, TXT and CSV format.
- Contributing scripts and documentation to the open-source NSMQ AI GitHub repository to support reproducibility and collaboration.
- Complying with ML engineering best practices and data preprocessing code.
- Developing and implementing a Python script to crop videos based on subject or riddle segmentation, identifying each subject or riddle's start and end points in the video.

Responsibilities and sustainability, Energy Systems and Mobility, Process Engineering, Systems Identification and Modelling, Advanced Communication Systems and Internet of Things, Development Economics, Sustainable Engineering, Product Development and Reliability and Risk

MAS. MECHATRONICS ENGINEERING

ETH Zurich,
Switzerland
January 2022 - Present

Mathematical Tools,
Thermofluids,
Computer
Programming and
Embedded Systems,
Analog and Digital
Electronics, Statics
and Solid Mechanics,
Signals and Systems,
Material Engineering,
Dynamics and
Computational
Methods

B. ENGR MECHANICAL ENGINEERING

University of Nigeria,
Nigeria
October 2014 –
September 2019

Grade: 4.18/5

FINANCE AND SPONSORSHIP MANAGEMENT

TEDXASHESIUNIVERSITY, ACCRA, GHANA

September 2022 – May 2023

- Curated and Managed budget.
- Sourced for funds and sponsorship to raise equal or more than the budgeted amount.
- Analysed and Managed Cash flow internally and externally.

OPERATIONS AND MAINTENANCE ENGINEER

ICE COMMERCIAL POWER, DELTA STATE, NIGERIA

January 2021 – January 2022

I Ensured daily Operations and maintenance of ten mini-grid solar plant sites in Asaba, Delta State, Nigeria.

- Troubleshooted, Maintained, Changed, and Installed smart meters
- Monitored all sites on two independent Software UI and resolved any observed issues within the shortest possible time.
- Designed, installed, and maintained Solar PV systems.
- Collated daily Energy generation and consumption data
- Detailed daily reporting to the Regional Operations Manager through Google Sheets, forms, and email.
- Carried out monthly and weekly data analysis and presentation of site performance with improvement and optimisation suggestions

MECHANICAL ENGINEERING INTERN

FEROTEX CONSTRUCTION COMPANY, ENUGU STATE, NIGERIA

April 2018 – October 2018

- Assisted in Heavy-duty machinery (Caterpillar machines and Trucks) servicing and maintenance.
- Managed spare parts Inventories, diesel, and engine oil usage daily.
- Reported to the Head of the mechanical department.

Skills

CAD Design: NX and
Autodesk Inventor.

Troubleshooting:
Mechanical and
Electrical.
Teamwork.

Programming:
Python, C++, MATLAB,
HTML and PLC.

Data Analyst and
Machine Learning.

Cash Flow
Management and
Analytics

Microsoft Office

Creativity Technique.

Problem-Solving and
Critical Thinking.

Emotional
Intelligence

Energy Audit and
Storage Design.

Electrical
Connections.

Solar PV System
Design and
Installation.

INFORMATION AND COMMUNICATION TECHNOLOGY INTERN

UNIVERSITY OF NIGERIA ICT UNIT, ENUGU STATE NIGERIA

July 2017 - September 2017

July 2016 - September 2016

- Designed and managed Google forms for e-documentation
- Carried out WIFI connectivity monitoring and downtime optimisation protocols by reporting to the management.
- Transformed and uploaded physical files into e-records using Microsoft Suits for the Department of Education Foundation.

Courses and Certifications

TECHNICAL SALES; THE ROLE OF SALES ENGINEER,

LINKEDIN LEARN

May 2022

- Acquired expertise in technical sales techniques.
- Achieved proficiency in contract closure techniques.
- Gained proficiency in developing marketing strategies and planning skills.

SOFT-SKILLS TRAINING, JOBBER MAN (COUSERA COURSE)

March 2021

- Proficient in team collaboration and effective communication.
- High emotional intelligence for improved interpersonal relationships.
- Applied creative techniques for innovative solutions.
- Strong critical thinking for informed decision-making.
- Demonstrated leadership skills for goal attainment.
- Effective networking for valuable professional relationships.
- Demonstrated leadership skills for goal attainment.

ENERGY TRANSITION; INNOVATION TOWARDS A LOW-CARBON FUTURE, IFP SCHOOL-COLLEGE IN RUEL-MALMAISON, FRANCE

April 2021

Amongst 32% of 11,429 candidates, to complete 5 weeks MOOC on Energy Transition and obtain the Certificate.

- Renewable energy challenges and floating offshore wind turbines.
- Electricity in global energy demand and societal approach to energy demand.
- Cost issues and risks of low-carbon technology minerals.
- Path to sustainable energy access and stresses on energy demand.
- Low-carbon electricity mix and innovation for a low-carbon future.
- Oil and gas exploration to distribution, gas resources and reserves.
- Geothermal energy for heating and greenhouse gas reduction.
- Carbon Capture and Storage and energy storage solutions.

Leadership Skills

ISA VICE PRESIDENT

INTERNATIONAL STUDENTS' ASSOCIATION, ASHESI UNIVERSITY, GHANA

September 2022 – Present

ARM_Y CLUB VICE

PRESIDENT ARM ENGAGE STUDENT CLUB, ASHESI UNIVERSITY, GHANA

August 2022 – Present

PLATOON LEADER NYSC

BATCH B STREAM 1, RIVERS STATE CAMP, NIGERIA

November 2020 – October 2021

ENGINEERING DESIGN

GROUP LEADER

MECHANICAL ENGINEERING DESIGN PROJECT, UNN, NIGERIA

ME511 Group six, 2019

- Natural hydrogen overview and role of natural gas and underground natural gas storage.
- Hydrogen production for decarbonisation and harmful emissions with Bioenergy and CCS.
- Bio-sourced chemicals and fuels and IoT technology for energy efficiency
- Pinch methodology and waste heat exchanger for energy efficiency.

TRAINEE SOLAR ENGINEER SPECIALIST, ENERGY TALENT COMPANY

March 2021

- 250+ hours of online training in ETC'S Solar PV Foundational Course.
- 350+ hours of online training in ETC'S Solar PV Specialisation Course.
- Participated in two In in-class projects involving Solar Design and Installation.
- Designed schematic diagram of a Solar PV System using Microsoft Word.
- Participated in group activities involving solar research, documentation, and presentation.
- Demonstrated ETC's values during individual and group tasks (Trust and transparency; Teamwork and diligence; Global Excellence).
- Demonstrated respect, friendliness, and willingness to help wherever needed.
- Carried out day-to-day online challenges accurately and efficiently.
- Completed six weeks apprenticeship program at ICE Commercial Power: Off-takers Relations, Energy Audit, Solar Systems Design, Installation and Maintenance.

Volunteering

MATHEMATICS TEACHER,

NATIONAL YOUTHS SERVICE CORP, PORT HARCOURT, NIGERIA

November 2020 - October 2021

AUTODESK INVENTOR, LINKEDIN LEARNING

May 2022

- Proficient in Autodesk Inventor 2022, including 3D modelling, parts assembling, and drawing technical documentation.
- Experienced in creating complex 3D models and assemblies, ensuring precision and accuracy in design.

References

Available upon request.

THE COSHH RISK ASSESSOR CERTIFICATION, THE KNIGHTS OF SAFETY ACADEMY

October 2019

- Demonstrated Sufficient knowledge of hazardous substances and how they can affect their workplace.
- Proficiently demonstrated a comprehensive understanding of the risk assessment process, encompassing its key principles and methodologies.
- Understanding how the risk assessment process aids in implementing employee health protection measures.