COLLINS OGBODO

LinkedIn
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GitHub
Academic Publication

SUMMARY

Digital Twin System Engineer | Data Scientist | Entrepreneur passionately researching at the intersection of machine learning and virtual physics models for the development of innovative framework within business and technical decision making. Interested in developing data-physics based decision support systems.

EDUCATION

University of Sheffield | PhD Mechanical Engineering Class of 2026

Development of dynamic digital twin for next generation mechanical testing and control (Reinforcement Learning).

MITx | Micro-Master Statistic and Data Science Class of 2023
Project| Automatic review analyser, Digit recognition, Collaborative filtering via Gaussian mixtures.

Skolkovo Institute of Science and Technology | MSc. Energy Systems (Information Systems and Technology) Class of 2022| 5.0/5.0

Development of Simulation-based Digital Twin for Smart Space HVAC System: Case Study of a phytotron System.

University of Port Harcourt | B.Eng. Mechanical Engineering Class of 2019 | 4.78/5.0

Techno-Economic Analysis of Combined Gas Turbine-Stirling Engine Generator.

HONORS & AWARDS

- UKRI-EPSRC and Siemens Digital Industries Software Doctoral Studentship 2022.
- One League Presidential Scholarship Award 2022 & 2024.
- ISP Recognition for educational contribution 2022.
- Energy Systems Industrial Immersion Excellence Award 2021.
- Skolkovo Foundation Masters Scholarship Award 2020
- Best Graduating Student School of Engineeering 2019
- NSE, PHC. Branch Award for Academic Excellence 2019.
- Chris Oyirinda's Award for Academic Excellence 2019.
- Scholarship Award Petroleum Trust Development Fund (PTDF).
- Scholarship Award Delta Afrik Charitable Foundation (DCF).

EXPERIENCE

University of Sheffield | Sheffield, United Kingdom
Graduate Teaching Assistant | 2023 - Present

- Facilitator for the 2025 EYH and GEC events, managing the project **AI Solutions for Engineering**, guiding and mentoring **36 students** per event in developing AI-driven solutions for engineering challenges.
- Leading **practical experiments and computational model development** for structural and vibration engineering using **Matlab, python and Ansys**.
- Participated in a comprehensive **BAE hawk full body structural dynamic test** funded by the **Alan Turing Institute Research and Innovation Cluster for Digital Twins and EPSRC**.

TION GLOBAL | Moscow, Russia
Energy System Intern | 2021

- Developed simulation based **digital twin for increased monitoring and predictive capability of HVAC systems**. The model was used for predetermination of optimal number of units to deploy in buildings through air quality impact simulation.
- Developed **digital twin implementation strategy of HVAC systems** to guide and facilitate the company's integration of digital twin technology into its operation.

ALON TECHNICAL SERVICE LIMITED | Port Harcourt, Nigeria
Part-Time Project Engineering Intern | 2019-2020

- Involved in the **analysis and fabrication of 1.03km 6" pipeline**, responsible for ensuring project stipulated time and cost is achieved.
- Supervised the **design and fabrication of a Shell shaker, mud tanks, batch mixer and degasser**, ensuring the project completion before the plan date.

PENSER L' AVENIR | Port Harcourt, Nigeria
Co-founder & Design Engineer | 2016 - 2019

- Systems engineering department lead - **Managed all systems engineering project** involving development of **MATLAB and AVEVA PDMS models**.
- Produced project **equipment design for oil, gas and subsea companies** using **SolidWorks**.
- Developed **mathematical model for concrete constituent substitution** which reduced project cost and duration significantly using **Matlab**.

Professional Skills

Programming Language: 6+ years experience in Python and Matlab
Software/Framework: 5+ years PyAnsys, Pytorch, Scikit-learn, Git, SolidWorks, Gymnasium, BoTorch (Ax), StableBaseline3, Tianshou, Ray Rllib, Matlab, Ansys.
Soft Skills: Leadership, teamwork, project and time management, effective communication, technical writing, presentation.

Conferences/Presentation/Poster

IACM Digital Twins in Engineering Conference (DTE 2025): Toward Dynamic Digital Twin: Enhancing Model Accuracy with Adaptive Sensor Steering Strategy.
International Conference on Noise And Vibration Engineering (ISMA2024): Mode indicator guided sequential modal analysis.
Dynamics Research Group 2024-2023 Showcase: Optimal sensor placement via reinforcement learning.