BAMIDELE AROBOTO

Boston, MA| atbami@bu.edu | +1(857)-313-1715| linkedin.com/in/bamidele-aroboto

EDUCATION

Boston University (BU) Boston, MA
Doctor of Philosophy (Ph.D.) in Mechanical Engineering Expected May 2027
Recipient of Institute for Global Sustainability Fellowship GPA: **4.0/4.0**
Courses: Material Science Engineering, Machine Learning, Deep Learning

Boston University (BU) Boston, MA
Master of Science in Mechanical Engineering Sep 2022- May 2025
Recipient of BU Distinguished Engineering Fellowship GPA: **3.63/4.0**
Courses: Thermodynamics and Energy systems, Kinetics of Materials

University of Lagos (UNILAG) Lagos, NGA
Bachelor of Science in Mechanical Engineering Jan 2015-Nov 2019
Courses: Python Programming, Engineering Statistics, Mechanics of Materials GPA: **4.52/5.00**

EXPERIENCE

ML/Materials Scientist-BU material Informatics Lab **(MA, USA)** Sep. 2022-Present

- Designed and optimized machine learning (ML) pipelines (GNNs, DNNs, Gaussian Processes) to extract patterns from high-dimensional datasets, improving accuracy by 15–25%.
- Built a GNN-based defect-detection pipeline to anticipate property degradation and trigger early, in-process interventions that improve manufacturing quality.
- Developed and deployed a scalable graph neural network to detect structural/phase transitions in metals and alloys, supporting inline monitoring.
- Implemented end-to-end data and model pipelines for High Performance Computing (HPC) frameworks (Linux/Unix, Python), reducing training time by 30%.
- Collaborated with cross-disciplinary teams to integrate experimental and computational data, accelerating project timelines by 15%.

HVAC Design Engineer- MAR & MOR Engineering Ltd. **(Lagos, NG)** Mar. 2022 - July. 2022

- Designed and optimized backend workflows for HVAC system simulations, improving accuracy of load calculations and efficiency of design iterations by 15%.
- Led cross-disciplinary teams to develop project schedules for Daikin VRV systems in commercial and residential buildings, aligning with global sustainability standards.

Mechanical Design Engineer- Alph4Mep Ltd **(Lagos, NG)** Jan. 2020- Feb. 2022

- Applied CAD tools and simulation software to design and implement mechanical systems for residential, commercial, and industrial projects.

PROJECTS

Autonomous and Intelligent Multi-scale Extractions of Descriptors (AIMED) Jan.2023 - Present

- Integrated molecular dynamics simulations with machine learning (ML) to autonomously extract key structural descriptors, enabling optimization of complex structure–property relationships.

Structural Orderness Degree for Atomic Systems (SODAS) Dec. 2022 - Aug. 2023

- Developed a graph neural network (GNN) framework to characterize and predict structural transitions in any material with strong physical interpretability.

Skills

Programming and Software Prowess: Python, C/C++, Linux/Unix, Git, LAMMPS, HTML, Numpy, Pandas, SciPy, ASE, PyTorch, Keras, visualization software (ovito), presentation software (PowerPoint), document software (LaTeX, Word), Microsoft excel, AutoCAD, Solidworks, Revit, Autodesk inventor
Expertise: ML model deployment and optimization, GNNs, molecular simulations, data analysis

PROFESSIONAL CONFERENCE TALKS

- Materials Research Society (MRS) Conference – 2023 and 2024
- Artificial Intelligence for Material Science (AIMS) - 2024

PUBLICATION

(Invited article) Aroboto, B., Chen, S., Hsu, T., Wood, B. C., Jiao, Y., Chapman, J., "Universal and interpretable classification of atomistic structural transitions via unsupervised graph learning", Applied Physics Letters, 123, 10, August 2023*

NOTABLE AWARDS

- Institute for Global Sustainability Fellowship 2025
- BU Distinguished Engineering Fellowship 2022
- The UNILAG Dean's Award: University of Lagos 2019
- UNILAG Endowment Scholarship 2018