

NII OTU TACKIE-OTOO

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EDUCATION

Master of Science, Civil Engineering (Civil Infrastructure Systems) August 2022 – May 2024
University of Delaware, Newark DE, USA

Bachelor of Science, Civil Engineering September 2015 – May 2019
Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana

SKILLS

- **Programming Languages:** Python, R, MATHLAB, SAS
- **Tools:** Microsoft Office Suite, SAP Business One, SQL, Power BI
- **Engineering and Design Software:** AutoCAD, Solidworks, ArcGIS Pro

RESEARCH AND PROJECTS

Prediction of Hurricane Loss Using Wind Speed Data, Policy-Based Inventory, and Insurance Claims Data August 2022 – May 2024

- Developed statistical and machine learning models to predict hurricane loss using Python.
- Performed data cleaning, data preprocessing, and exploratory data analysis of the insurance claims data used.
- Interpreted model results to understand effect of independent variables on hurricane damage/loss.
- Investigated and understood relationship between hurricane loss and wind speed, policy and property attributes.

Breast Cancer Prediction Using a Machine Learning Approach October 2023 – December 2023

- Worked in a team of four to develop and train four different classification machine learning models (Logistic Regression, Support Vector Machine, Random Forest, and k-Nearest Neighbor) to predict whether breast tumor is benign or malignant, using cell nuclei data gotten from a digitized image of a breast lump fine needle aspirate.
- Evaluated how hyperparameter tuning affects model performance.

Spatial-Temporal Analysis of Complaints and Arrests Data in New York City October 2023 – December 2023

- Identified the complaints and arrests hotspots in New York City (2012-2022) and analyzed the temporal patterns.
- Analyzed existing racial disparity and evaluated fairness in the New York City criminal justice system.

Instance Segmentation for Accessibility: Submission to the Accessibility, Vision and Autonomy 2023 Challenge March 2023 – May 2023

- Worked in a team of four on a project focused on developing vision-based benchmarks and methods relevant to accessibility in areas where autonomous systems try to identify people with disabilities.
- Fine-tuned two pre-trained Convolutional Neural Network (Mask R-CNN & DetectoRS) for instance segmentation.

Predicting Energy Consumption Using Population, GDP, Inflation and Climate Change March 2023 – May 2023

- Assessed the impact of Population, GDP, Inflation, Urban Population and Climate Change in predicting Global Energy Consumption using Multiple Linear Regression, Decision Tree Regressor and Artificial Neural Network.

Trend Analysis of Rainfall and Temperature Data in the Pra Basin February 2019 – May 2019

- Carried out trend analyses on monthly and seasonal rainfall and temperature to examine climate change.

PROFESSIONAL EXPERIENCE

University of Delaware - Newark, DE, USA September 2022 – May 2024
Graduate Research Assistant

- Loss modeling of hurricane damage using wind speed, insurance claims and policy-based inventory data.
- Validated the existing UD damage/loss model using insurance claims data.
- Worked as a research assistant on the Coastal Hazards, Equity, Economic Prosperity, and Resilience (CHEER) Project – a \$ 16.5M NSF Funded Project.

Atlas Copco – Accra, Ghana November 2021 – August 2022
Account Manager

- Provided technical sales and engineering support for a wide range of Atlas Copco products to companies in Engineering, Mining, Construction and Manufacturing Industries.

- Analyzed sales data to develop strategies which increased clientele base by 13%.
- Delivered technical presentations about Atlas Copco products and services to existing and prospective customers.

HILTI Ghana – Accra

January 2021 – September 2021

Account Manager | Technical Sales Engineer

- Offered technical and sales support in the form of design and equipment recommendation on top civil and construction projects to facilitate the construction of these projects.
- Participated in design reviews to give technical advice and solutions to project problems.
- Organized frequent equipment and product demonstrations and trainings.

Peponi Gruppe Limited – Accra, Ghana

September 2020 – December 2020

Project Engineer

- Supervised works during the construction of a highway project and ensured conformance to all safety guidelines.
- Checked technical designs and drawings to ensure that they were followed on correctly.
- Provided technical and problem-solving advice onsite.

Ghana National Petroleum Corporation (GNPC) – Tema, Ghana

September 2019 – August 2020

Assistant General Service Officer (Contract and Property Maintenance), NSP

- Designed general refurbishment works and other design works on GNPC properties using AutoCAD.
- Designed and supervised all works on office layout during space allocation.
- Compiled and did calculations on Bill of Quantities for GNPC tender documents for GNPC Building Projects.

Adnak Engineering Limited - Kumasi, Ghana

June 2018 – July 2018

Civil Engineer Associate, Internship

- Assisted Structural Engineer in creating 2D design documents and 3D structural models using AutoCAD.
- Worked on calculations for bending schedule and loads and stresses calculations on structural foundations.

PEC Consult Limited – Accra, Ghana

June 2017 – August 2017

Junior Civil Engineer, Internship

- Assisted Structural Engineering Team in tracking and reporting on project progress.
- Assisted team in preparing bids for tender.

Antartic Contract Works – Koforidua, Ghana

June 2016 – August 2016

Site Engineer Trainee, Internship

- Supervised work during the construction of the National Communication Authority building in Koforidua, Ghana.
- Interpreted architectural and structural drawings to construction workers.
- Prepared daily report on construction progress and made recommendations to General Site Manager.

Goldplus Microfinance Limited – Koforidua, Ghana

June 2016 – August 2016

Assistant Finance Officer, Internship

- Worked on data entry of cash received for savings and investment.
- Worked with the Human Resource department as a Customer Service Representative.

LEADERSHIP EXPERIENCE

Executive Member (TekTalk Chairman), Students’ Representative Council (SRC) – KNUST

May 2018 - April 2019

- Coordinated the organization of the 2018/2019 KNUST SRC TekTalk Program (a non-profit program devoted to the spreading of ideas, usually in the form of short but powerful talks), which hosted the former president of Ghana, H.E. Flt. Lt. Jerry John Rawlings; Hon. Benjamin Kunbour, former minister of defence; among others.

Head of Sales | Financial Secretary, TakeOver Incorporated – KNUST

September 2015 – May 2019

- Developed strategies and new sales channels which improved upon general marketing and sales for TakeOver Incorporated, an event organizing body, which saw a rise in sales of major events tickets by 778% in 13days.
- Prepared all budgets for TakeOver Inc. events and made sure they aligned with annual budget.

Financial Secretary, United Nations Students Association – KNUST

May 2018 - May 2019

- Prepared an annual budget for the Association which ensured the right appropriation for funds for all activities.
- Organized educative programs about the United Nations which improved upon membership numbers.

Financial Secretary, Ghana Engineering Students Association – KNUST

April 2017 - April 2018