

Prince Mensah

M.S STUDENT IN MACHINE LEARNING · AIMS - AMMI

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Education

African Institute for Mathematical Sciences (AIMS)

M.S IN MACHINE LEARNING

Mbour, Senegal

Feb. 2024 - Present

African Institute for Mathematical Sciences (AIMS)

M.S IN MATHEMATICAL SCIENCES

Accra, Ghana

Nov. 2022 - Aug. 2023

Kwame Nkrumah University of Science and Technology (KNUST)

B.S IN MATHEMATICS

Kumasi, Ghana

Oct. 2017 - Nov. 2021

Skills

Languages	Python, C/C++, LaTeX, R, SQL.
Technologies	Git, Docker, GitHub, Streamlit
Libraries	Pytorch, TensorFlow, Scikit-Learn, Numpy, Scipy
Others	End-to-end deployment, Innovation and Leadership

Experience

Industry Immersion Africa

TUTOR, DATA ANALYTICS

Accra, Ghana

Sep. 2023 - Nov. 2023

- Tutored students interested in pursuing careers in industry.
- Covered topics such as Advanced Data Analytics, Power BI, General Management, Data & Decisions, and Agile Leadership.

iAnalyze Mentorship Program

DATA SCIENCE INSTRUCTOR

Accra, Ghana

Feb. 2023 - Aug. 2023

- Taught data science concepts including; predictive analytics, basic machine learning concepts, and programming in Python and R.
- Collaborated on curriculum design and addressed student concerns to ensure the program's success.

Kwame Nkrumah University of Science and Technology

TEACHING ASSISTANT

Accra, Ghana

Oct. 2021 - Nov. 2022

- Tutored undergraduates in Differential Equations, Numerical Methods, Linear Algebra, and helped with grading.
- Collaborated with faculty in research activities.

Research Projects

MS Thesis

DARK-SOLITON QUANTUM BITS FROM THE COHERENT DYNAMICS OF BOSE-EINSTEIN CONDENSATES WITH SELF-DEFOCUSING

AIMS Ghana

NONLINEARITY

June, 2023

- Studied how Bose-Einstein condensates (BECs) with self-defocusing effects can create quantum bits using dark solitons in a dilute gas.
- Developed a mathematical model for BECs and examined the quantum states they produce.
- This research helps explore new ways to encode and control quantum information with BECs.

B.S Thesis

PREDICTING THE SEVERITY OF ROAD TRAFFIC ACCIDENTS IN GHANA USING MACHINE LEARNING ALGORITHMS

Kumasi, KNUST

May, 2021

- Used machine learning models such as Random Forest, Logistic Regression, and Neural Networks to predict crash injury severity.
- Compared their performance based on accuracy and other metrics, and used feature selection to find important factors.

Updates on Meningitis Surveillance in the Upper West region of Ghana (2012-2020)

COLLABORATIVE PROJECT

Kumasi, KNUST

July, 2021

- Analyzed Meningitis data from the Upper West region in Ghana, focusing on cases from 2012 to 2020.
- Using QGIS software, we studied the spread of cases and deaths across the 11 districts in the region.

Selected ML Competitions and Projects

Cassava Leaf Disease Classification (1st Place)

[Kaggle Link](#)

MODEL ACC: 91.7% - IDENTIFIED CASSAVA LEAF DISEASES USING DEEP LEARNING (RESNET 50)

[Web App](#)

- Utilised the ResNet50 model for cassava leaf disease classification
- Built a web app using the model to classify cassava leaf images into one of several categories to help identify common diseases.

Image Classification with the AlexNet architecture

[GitHub](#)

MODEL ACC: 84.85% - IMPLEMENTED THE ALEXNET ARCHITECTURE FROM SCRATCH AND TRAINED IT ON CIFAR10 AND CIFAR100

- Trained an AlexNet-based Convolutional Neural Network on the CIFAR-10 and CIFAR-100 dataset using PyTorch
- Applied several augmentation techniques including; mixup, cutout and cutmix to avoid overfitting

Object Detection using FasterRCNN

[GitHub](#)

BACKBONE NETWORK: RESNET50

[Web App](#)

- Built a real-time object detection model using FasterRCNN.
- Deployed the model on streamlit where users can upload images or use their webcam to detect and visualize objects live.

Question Answering System using Transformer

[GitHub](#)

UTILIZED SENTENCETRANSFORMERS FOR GENERATING EMBEDDINGS

- Developed a QA system that answers user questions by finding relevant text from a database.
- It uses advanced machine learning and data retrieval for accuracy.

Awards& Achievements

2024 **Master's in Machine Intelligence Scholarship**, for M.S in Machine Learning.

[AMMI, Senegal](#)

2022 **Master's in Mathematical Sciences Scholarship**, for M.S in Mathematical Sciences.

[AIMS, Ghana](#)

2017 **Ghana National Petroleum Corporation (GNPC) Scholarship Award**, for B.S in Mathematics.

[KNUST, Ghana](#)