

Education

MASTER OF SCIENCE IN MATHEMATICS

Florida Atlantic University – Boca Raton, FL

Expected May 2024

CGPA: 3.74/ 4.0

BACHELOR OF SCIENCE IN ACTUARIAL SCIENCE

Kwame Nkrumah University of Science and Technology – Kumasi, Ghana

September 2021

CWA: 76.65/ 100

Research Interest

- Statistical Machine Learning with Complex Data Structures.
- Application of Bayesian Computing in Enhancing Machine Learning Algorithms for Improved Model Uncertainty Estimation and Decision-Making.

Relevant Projects and Research Experience

TIME SERIES ANALYSIS OF US MONTHLY UNEMPLOYMENT RATES

November 2023

Performed a concise time series analysis in python on US monthly unemployment rates from 1948 to 2022. Explored trends, seasonality, and patterns through data visualization. Employed ARMA models, selected the optimal model (ARMA (15,19)) based on AICC, and thoroughly analyzed residuals for normal distribution and lack of autocorrelation.

STROKE DATA ANALYSIS – Florida Summer Institute in Biostatistics and Data Science – Boca Raton, FL

May 2023 - June 2023

Conducted thorough exploratory data analysis on a stroke dataset, developing a predictive machine-learning model. Designed an interactive R-Shiny app featuring dataset statistics, custom visualizations, and stroke occurrence prediction with a GLM, achieving an 87% accuracy rate. [Click Here](#) to try the Shiny App. ([GitHub](#))

DIMENSIONALITY REDUCTION OF AN NBA DATASET

March 2023

Utilized R to perform principal component analysis (PCA) on an NBA dataset, unveiling insights. Analyzed results showed a visually compelling biplot, indicating 90% positional clustering and dispersion among players of different positions.

NOVEL RADIOIMMUNOTHERAPY PATIENTS SURVIVAL ANALYSIS - [GitHub](#)

February 2023

Performed survival analysis using Grana et al. (2002) non-randomized clinical trial data on radioimmunotherapy for malignant glioma. Analyzed survival times, created curves, and used log-rank tests. Significantly longer average survival was found in the treated group, suggesting potential efficacy for improving patient outcomes.

DATA COLLECTION APP FOR CLINICAL TRIAL- [GitHub](#)

January 2023

Developed an R-Shiny data collection app for a clinical trial, enhancing the process of gathering participant data for a sleep quality study. Collected essential details such as participant ID, demographics, and baseline traits. The data showed a significant 15% improvement in sleep quality for adults reporting sleep issues and taking nutritional supplements. [Click Here](#) to try the Shiny App

DATA ANALYSIS OF DIAMOND ATTRIBUTES: CUT, CARAT, AND PRICE- [GitHub](#)

December 2022

Analyzed intricate links among diamond qualities: cut, carat, and price. Utilized Python for scripting in regression and visuals to unveil critical trends. Results highlighted carat weight and cut's significance in pricing. The model's R-squared of 0.8565 showed 85.65% predictability in diamond prices via carat and cut. [PDF of analysis](#)

Relevant Work Experience

GRADUATE RESEARCH AND TEACHING ASSISTANT– Florida Atlantic University – Boca Raton, FL

August 2022 - Present

- Analyzed head circumference data in infants of pregnant women using multiple linear regression in Python, resulting in 89.54% predictability for low infant birth weight.
- Tutor at the Math Learning Center, leverage data and programming languages to identify and address challenges, resulting in a 20% increase in student proficiency, primarily using R for statistical analysis.
- Instructs Methods of Calculus (MAC 2233-16B) to 45 undergraduate students, emphasizing a comprehensive understanding of mathematical concepts focusing on practical business applications.

GRADUATE ACTUARIAL TRAINEE – *StarLife Assurance – Accra, Ghana*

October 2021 – July 2022

- Analyzed, cleaned, and modeled data for experience analysis. Findings revealed a 65% pricing and valuation-adjusted mortality rate and a 10% AIDS rate for fiscal year 2022, employing Python for data processing and visualization.
- Generated premium summaries by products, distribution channels, and regions. Found that 55% of premium revenue came from endowment products, leading to a 20% sales boost for those products.
- Employed Basys, an in-house actuarial software, to precisely analyze and calculate competitive premium rates for an innovative insurance product, resulting in a 12% increase in sales among market women.
- Generated insightful visualizations and reports to communicate key findings, aiding stakeholders in data-driven decision-making.

DATA ANALYST INTERN – *StarLife Assurance – Accra, Ghana*

July 2019

- Executed data cleaning, preprocessing, and analysis tasks proficiently using Excel and Basys, contributing to a 15% improvement in data accuracy.

Technical Skills

Programming: Python (NumPy, Pandas, Scikit-learn, Matplotlib), R (dplyr, tidyr, ggplot2, caret, shiny, markdown), SAS

SQL: PostgreSQL, SQLite, MySQL, Big Query

Business Analytics: Business Intelligence, Statistical Analysis, Data Visualization, Tableau, Power BI, Data wrangling, EDA

Office Suite: Excel (Pivot Table, Pivot Chart, VLOOKUP, HLOOKUP, VBA), Word, PowerPoint

Leadership Experience/ Extracurricular Activities

VOLUNTEER – *Math Day at Florida Atlantic University – Boca Raton, FL*

April 2023

Enthusiastically volunteered at Math Day at FAU, supporting over 50 high school students by providing essential assistance and guidance. Fostered a positive learning environment, showcasing dedication to education and cultivating a passion for mathematics.

FOUNDING MEMBER AND FINANCIAL CONTROLLER – *DDF Smile Foundation – Accra, Ghana*

May 2020 - July 2022

Oversaw finances for a foundation dedicated to enhancing the well-being of underprivileged children through education, healthcare, food, and insurance, aligning with SDG goals 3, 4, and 5. As the financial controller, I developed budgets, linked financial goals to strategic objectives, and provided precise reports to executives, directors, and external stakeholders.

VOLUNTEER TEACHING – *Papasi R/C Basic School – Accra, Ghana*

May 2020 – September 2020

Elevated student learning by strategically implementing diverse instructional methodologies and creative virtual classroom engagements amid the COVID-19 pandemic.

AUDIT COMMITTEE HEAD – *Actuarial Science Student Association – Kumasi, Ghana*

September 2019 – September 2020

Oversaw the financial reporting process, audit procedures, and internal control systems and ensured adherence to legal and regulatory requirements within the association.

Honors and Awards

GOOGLE DATA ANALYTICS CERTIFICATE – *Coursera*

August 2023

Completed the Google Data Analytics Certificate, showcasing proficiency in data analysis and related skills: Applied R programming language, Big Query, and Tableau for practical data analysis and visualization.

MTN GHANA BRIGHT SCHOLARSHIP AWARD

September 2019 – September 2021

Recipient of the MTN Ghana Bright Scholarship Award, providing crucial financial support for tuition, books, and living expenses. This scholarship recognizes and assists deserving, academically gifted students facing financial constraints in college.

CERTIFICATE OF PARTICIPATION – *Annual Actuarial Science Student Association Ghana Quiz Competition*

February 2020

Received a Certificate of Participation for the Annual Actuarial Science Student Association Ghana Quiz Competition, showcasing active engagement and involvement in academic events related to actuarial science.

KNUST SCR SCHOLARSHIPS AND KNUST BURSARY

September 2017 – September 2019

Recipient of the KNUST Student Representative Council Scholarship and KNUST bursary, securing a 50% tuition waiver for two academic years. This scholarship supports academically accomplished yet financially challenged students, contributing to educational opportunities and success.