Benedict Kuunaa-eguo Kongyir

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301 Math Statistics and Computer Sciences (MSCIS)
Oklahoma State University
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Education

Oklahoma State University — Expected Graduation: May 2026
Ph.D. in Statistics — *Stillwater, Oklahoma*

- **Thesis:** Evaluation of the Utility of Normality Tests in Statistical Practice.
  Advisor: Prof. Pratyaydipta Rudra
- **Relevant Coursework:** Large Sample Inference, Advanced Statistical Inference, Advanced Probability, Statistical Machine Learning with R, Predictive Analytic Technologies, Real Analysis, Linear Models, Experimental Design, etc.

Youngstown State University — May 2021
MS. Mathematics — *Youngstown, Ohio*

- **Project:** Predicting Telecommunication Customer Churn Using the HopeField Neural Network Model.
  Advisor: Prof. Andy Chang
- **Relevant Coursework:** Bayesian Statistics, Advanced Linear Algebra, Monte Carlo Methods, Data Mining and Data Warehousing, Advanced Data Analysis, Time Series Analysis

Kwame Nkrumah University of Science and Technology — May 2017
BSc. Actuarial Science — *Kumasi, Ghana*

- **Project:** A Model to Price Insurance Using Options .
  Advisor: Vincent Kofi Dedu
- **Relevant Coursework:** Financial Mathematics, Actuarial Mathematics, Life Contingencies, Loss Models, Pension mathematics, Assets and Liability Management, Mathematical Models in Finance, Principles of Financial Accounting, Principles of Cost Accounting, Micro and Macro Economics,
  Language of Instruction: English

Work Experience

Milliman – Life Technology Solutions (LTS) — May 2024 – August 2024
Actuarial Intern — *Chicago, Illinois*

- Conducted detailed quantitative analysis to assess the impact of using varying spot rates on financial projections.
- Created a tool for scenario generation for model pre-production. My tool allows for rapid and flexible generation of diverse scenarios, which improves the robustness of the model for accurate and better decision-making.
- Conduted a Kolmogorov's Smirnov test to test if random numbers from a scenario generation are uniformly distributed. This ensures the validity and reliability of the model projections.

Milliman – Life Technology Solutions (LTS) — May 2023 – August 2023
Actuarial Intern — *Chicago, Illinois*

- Developed an interactive dashboard of yield curves using Microsoft Power BI as a basis for a yield curve scenario generation process.
- Compiled different yield rates from various sources using Microsoft Excel VBA to create a report on the performance of the US stock market.
- Calculated shocks from the zero coupon rates using Python leading to the development of the yield curve scenario generation model for the Bermuda Market Authority.
- Conducted in-depth analysis into the liquidity and illiquidity of three different market structures, revealing interesting but important information about the performance of the various markets.

Milliman – Milliman Financial Risk Management (FRM)
Actuarial Intern

June 2022 – August 2022
Chicago, Illinois

- Streamlined and automated attribution reports analysis using Excel VBA, leading to about 30% reduction in reporting time.
- Automated the process of producing financial disclosures using Excel VBA, resulting in efficiency in producing financial disclosures and reducing reporting time by about 60%.
- Created a program for updating the billing books using Excel VBA, improving the accuracy rate to about 98%.
- Worked on hedge options operations: Run nightly trading grids on HedgeOps.

Oklahoma State University
Statistics Instructor

August 2021 – Present
Stillwater, Oklahoma

- Teaches Undergraduate Elementary Statistics: Demonstrated expertise in foundational statistics and effective pedagogical skills, contributing to the education of future statisticians.
- Teaches Undergraduate Statistics – Business Statistics and Analytics in Practice

Statistical Learning and Instruction Center
Statistics Tutor

August 2021 – Present
Stillwater, Oklahoma

- Tutors statistics courses including Elementary Statistics, Statistical Methods, Statistics for Experimenters, SAS and R Programming, Probability etc in the Statistical Learning and Instruction Center(SLIC).

Youngstown State University
Graduate Teaching Assistant

August 2019 – May 2021
Youngstown, Ohio

- Prepared and taught undergraduate College Algebra.
- Tutored Statistical Literacy and Critical Reasoning, College Algebra, Trigonometric, and Geometry at the YSU Mathematics Assistance Center to help improve undergraduate students' performance in mathematics and statistics.

Konbar Enterprise
Co-Founder

August 2021 – present

- Konbar is a social enterprise aimed at preventing malnutrition and food insecurity, providing jobs, stimulating impoverished economies, and empowering impoverished rural communities through innovative irrigation farming throughout the dry season in Africa.

State Insurance Company Ltd.
Actuarial Intern

May 2013 – August 2013
Wa, Ghana

- Worked on a team responsible for providing customers with detailed information about policies and products
- Performed other administrative duties such as data entry and data retrieving.

St. Francis Xavier Minor Seminary
Mathematics Teacher

August 2017 – July 2019
Wa, Ghana

- Prepared and taught High school Statistics, Trigonometry, and Calculus
- Assisted in the training of the Science and Maths Quiz team in mathematics for the 2018 National Science and Maths Quiz Competition.

Relevant Projects

Predicting Injury Severity for Drivers in Automobile Crashes | *R, R markdown*

- Extracted and cleaned data from the National Highway Traffic Safety Administration (NHTSA) .
- Employed five different prediction models including Artificial Neural Networks, Decision trees, random forest, gradient boosting trees, and logistic regression to identify the most influential factors affecting injury severity in car accidents on US roads.
- Provided recommended measures for implementation to help mitigate high injuries resulting from road accidents.

Predicting Telecom. Customer Attrition Using the Hopfield Neural Network Model. | *SAS Studio, SAS Enterprise Miner*
- Developed a prediction model to predict telecom. customer churn with an 81% prediction accuracy rate.
- Demonstrated the power of SAS Enterprise Miner in Predictive Analysis.

Bootstrap Regression for Investigating Macroeconomics Factors Affecting USA Home Prices | *R, R markdown*

- Extracted and cleaned data on US home prices from Kaggle using R
- Performed relevant Data Exploratory Analysis to identify important features for the model.
- Demonstrated the power of the bootstrap approach for estimating regression coefficients, especially in instances of violation of model assumptions.

Modeling Health Insurance Premium Using Bayesian Hierarchical Model. | *R*
- In this work, I used the Bayesian Hierarchical Model to obtain a better estimate of health insurance premiums.
- I also modeled the same health insurance data using the frequentist approach to ensure the results matched and were correct.

Pricing An European Call Option Using Monte Carlo Geometric Brownian Motion | *R*
- I used the Monte Carlo Geometric Brownian Motion formula driven from Stochastic Differential Equation to obtain the appropriate price for a call option through simulation.

Assessing The Effects of Substance Abuse on the Academic Performance of High School Students in the United States | *SPSS*
- In this work I used Logistic Regression to assess the negative effects of substance abuse on High school students' academic performance.
- Results and Recommendations from this work are very relevant for policymakers in safeguarding the youth to improve their academic performance.

Honors & Awards

VIK Family Research Fellowship
Oklahoma State University   *May 2025*

Outstanding Graduate Teaching Assistantship Award
Oklahoma State University   *December 2024*

International Association of Black Actuaries Achievement Award
International Association of Black Actuaries (IABA)   *May 2024*

International Association of Black Actuaries Achievement Award
International Association of Black Actuaries (IABA)   *May 2022*

Outstanding Graduate Student in Statistics Award
Youngstown State University   *May 2021*

Hult Prize Global Competition Regional Finalist
Hult Prize   *April 2021*

Recognition of Achievement Letter
From: James Trussel, President of Youngstown State University   *2021*

Professional Memberships

Member
International Association of Black Actuaries (IABA)   *2019 - present*

Student Member
American Statistical Association (ASA)   *2023 – present*

Elected Member
Honor Society of Phi Kappa Phi   *2021 – present*

Student Member
Society of Actuaries (SOA)   *2020 - present*

Student Member
American Mathematical Association (AMA)   *2019 – present*

Conferences and Bootcamps

International Association of Black Actuaries Annual Conference	2024
Oklahoma Conference for Statistics, Biostatistics and Data Science	2023
International Association of Black Actuaries Annual Conference	2022
Casualty Actuarial Society Summer Bootcamp	2021
StarLife Actuarial Workshop	2016
Prudential Annual Actuarial Seminar on Product Pricing	2015
Actuarial Science Career Summit: Embracing Future Opportunities Now.)	2014

Professional Certifications

Statistics for Risk Modeling (Exam SRM)
Society of Actuaries (SOA) *2022*
Applied Statistics (VEE)
Society of Actuaries (SOA) *2022*
Corporate Finance (VEE)
Society of Actuaries (SOA) *2022*
Economics (VEE)
Society of Actuaries (SOA) *2022*
Financial Mathematics (Exam FM)
Society of Actuaries (SOA) *2021*
Probability (Exam P)
Society of Actuaries (SOA) *2020*
SAS Certified Associate
SAS Global Certification *2020*

Technical Skills

Softwares: R, SAS Studio, SAS Enterprise Miner, SAS Viya, KNIME, Weka, Python, Microsoft Word, Microsoft Excel, Microsoft VBA, Microsoft Power BI, SQL
Reproducible Research: R markdown

Volunteer and Community Services

Mathematics and Computer Science Judge
Oklahoma State Science and Engineering Fair *2025*
Science and Mathematics Judge
The Ohio Academy of Science *2025*
Mathematics, Science and Engineering Judge
California Science and Engineering Fair *2024*
Science and Mathematics Judge
The Ohio Academy of Science *2024*
Volunteer Food Distributor
Arabs & American Food Give Away in Ohio *2019 – 2021*