

Griffin Agyekum Mensah

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RESEARCH INTERESTS

Biomarker variability; epidemic modeling and forecasting; longitudinal and high-dimensional biological data; wearable-device signal analysis; hierarchical/ multilevel models; population heterogeneity; reproducible statistical workflows; global health measurement challenges.

EDUCATION

Kwame Nkrumah University of Science and Technology

BSc Biochemistry (First Class Honors)

WES-evaluated GPA: 3.88 (US equivalent 4.0 scale)

Kumasi, Ghana

Sep 2015 – Jun 2019

Relevant coursework: statistical methods, experimental design and statistical analysis, calculus, algebra, population genetics, molecular genetics, molecular biology, bioinformatics, medical biochemistry, metabolism in health and diseases

RESEARCH PROJECTS AND TECHNICAL CONTRIBUTIONS

Undergraduate Research Project

Sep 2018 – May 2019

Kwame Nkrumah University of Science and Technology

Title: Assessment of Liver and Kidney Function, and Lipid Profile of Ntonso Traditional Textile Dyers - Designed and executed a case-control study (n=100) to assess biochemical impacts of occupational exposure.

- Engaged local community stakeholders to explain study objectives and obtain informed consent, ensuring ethical compliance and participant trust.
- Investigated occupational exposure to textile dyes using clinical biomarkers (ALT, AST, ALP, creatinine, lipid profile).
- Compared biomarker distributions between exposed and control groups using statistical tests via SPSS.

Predictive Model for Shea Stearin Applicability Using Refractive Index

Dec 2019 – Nov 2020

Bunge Limited

- Built and validated a pair of linear regression models to predict iodine value (IV) and StOST triglyceride content of shea stearin from refractive index (RI) measurements.
- Developed an outlier-handling strategy, feature assessment, and validation workflow.
- The model achieved strong performance for both IV ($R^2 = 0.779$; RMSE = 0.640) and StOST ($R^2 = 0.779$; RMSE = 0.642), based on model efficiencies and residual analyses extracted from dataset evaluation.
- The model demonstrated that RI is a low-cost, chemical-free, fast-measurement proxy for evaluating stearin applicability.
- Improved turnaround time for fat-quality screening while lowering analytical cost.

Optimized Shea Value Chain through Advanced Analytics

Jan 2022 – Dec 2024

Bunge Limited

- Collaborated with an inter-disciplinary team on developing an end-to-end modeling and scenario analysis for Bunge's shea supply chain, creating a digital twin and actionable planning guidelines.
- Delivered a prototype scenario computation tool in Dataiku enabling multi-level optimization and valorization.
- Identified strategies with potential annual savings of €1M+ including early kernel buying, origin optimization, and improved processing schedules.

Interlaboratory Proficiency Study

Nov 2023 - Present

Bunge Limited

- Designed and standardized an inter-laboratory proficiency testing protocol.
- Applied advanced statistical methods (Mandel's h & k statistics, Grubb's outlier test, Youden plots) to evaluate precision, accuracy, and reproducibility across 13 laboratories (21 laboratories in 2025).
- Conducted data validation and performance benchmarking, identifying sources of variability and recommending corrective actions.
- Authored a comprehensive report and established standardized procedures for ongoing proficiency testing.

EXPERIENCE

Bunge Limited

Quality and Food Safety Lead, Supply Chain

West Africa region

Nov 2022 – Present

- Collaborated with a cross-functional team in data collection, scenario building and developing an end-to-end supply chain model.
- Uncovered 16% in “missed revenue” by creating a chemical-based data simulation that determines the output of Bunge's fractionation plant at its most efficient.
- Initiated process benchmarking that involved mining for statistical significance between process parameters and manufacturing output.
- Developed and led a new remote team to achieve record low contamination and high quality across West Africa.
- Designed an annual interlaboratory proficiency test with 21 laboratories across 3 major continents.

Internal Audit Coordinator

Jan 2023 – Present

- Designed and conducted supplier and toll processor appraisals and optimization leading to 300% increase in the number of Bunge's efficient toll processors across West Africa.
- Coordinate an internal audit program across all processes and products, managing a team of seven auditors.
- Facilitate auditor training and ensure continuous competence development.

Quality Analyst

Sep 2019 – Nov 2022

- Developed and maintained a model to predict major triglyceride in shea stearin from refractive index that eliminated the burden of equipment downtime.

- Analyzed global customer complaints that led to a massive call to action of how the organization collects data.
- Built and monitored a dashboard that tracks production and quality KPI across 3rd party tollers across West Africa in eight West African countries.
- Organized refresher courses and workshops.

Kumasi Centre for Collaborative Research

Surveillance Interviewer

Kumasi, Ghana

Jul 2018 – Jan 2019

The surveillance was conducted by the International Vaccines Institute in collaboration with Kumasi Collaborative Research for the severe typhoid in Africa (SETA) project.

Responsibilities included but were not limited to:

- Tracking randomly selected households in the Kumasi metropolitan with GPS tracking devices.
- Interviewing one hundred households on their health-seeking habits.
- Following up on all interviews after six months.

Bacteriology Intern

Jun 2018 – Jul 2019

- Prepared culture media.
- Cultured bacteria.
- Performed gram staining.
- Run biochemical tests for bacteria.
- Carried out antibiotic susceptibility tests.

TEACHING AND TRAINING LEADERSHIP

Bunge Limited

Regional Program Lead, Quality and Food Safety Training

Jan 2022 – Present

- Design and governance: define curricula, modalities, trainers, and cadence for all West Africa sites
- Delivery: teach core modules (QA/QC, contamination control, audit readiness) as needed

Founder and Organizer of Annual “Shea Science” Workshops

Sep 2023 – Present

- Annual internal workshop educating staff on shea science and operations.

Founder and Instructor, “Data Sense” Program

Jan 2022 – July 2022

- Training where staff learn statistics for operations.

Intern development – Presentation Skills Coach

Nov 2021 - Present

- Short course for interns on structuring technical talks, visualizing data, and Q&A handling

Mobile Lab Ghana

Volunteer Educator

Sep 2018 – May 2019

- Brought hands-on science experiments to rural schools.

SKILLS

Statistical and Computational Methods

Regression modelling, classification, hypothesis testing, Youden plots, Mandel's statistics, principal component analysis, Monte Carlo simulation

Tools and Platforms

Python (NumPy, Pandas, SciPy, statsmodels, matplotlib), SQL, SPSS, Tableau, Excel, Power Query, Power BI, VBA, Dataiku

Others

Teaching and coaching, community engagement, supplier and customer management, ethical research practices, research participant recruitment, hazard analysis and critical control points (HACCP), quality control/quality assurance, auditing, web development

CERTIFICATIONS AND TRAINING

DeepLearning.Ai | Andrew Ng, Stanford University

Supervise Machine Learning: Regression and Classification

Feb 2024

Udemy

The Complete SQL Bootcamp | Jose Portilla

Jun 2022

University of Pennsylvania | Wharton Online

Fundamentals of Quantitative Modeling

Feb 2025

SGS India

FSSC 22000 V6 (FSMS) Auditor/Lead Auditor

Feb 2024

PUBLICATIONS

HSOA Journal of Alternative, Complementary and Integrative Medicine

Sedeafor, R., et al. (2024). In vitro Quality Evaluation of Six Brands of Metformin Hydrochloride Tablets Locally Manufactured in Ghana

Asian Journal of Biology

Donkor, B. S., et al. (2024). The Impact of Climate Change on the Transmission of Vector-borne Diseases and Drug Administration: A Review

VOLUNTEER WORK

Mobile Lab Ghana

Sep 2018 – June 2019

A volunteer group that organizes laboratory practical for students in less-privileged areas.

Red Cross society

Sep 2013 – May 2015

LANGUAGES

English – Advanced proficiency

French – Beginner

Asante Twi – Native fluency