

SMAILA AMOANU

PhD Student in Statistics and Data Science | Software, Website and Systems Developer | Digital Media and Creative Professional

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PROFESSIONAL SUMMARY

PhD student in Statistics and Data Science at the University of Nevada, Reno with experience spanning statistical research, university teaching, software and website development, business systems design, and digital media production. Skilled in building practical solutions across data, web, database, branding, and content systems for academic, business, and public-facing use.

EDUCATION

PhD in Statistics and Data Science (Mathematical Statistics) | University of Nevada, Reno, USA **2024–Present**

- Advisor: Mihye Ahn, PhD.
- Focus areas: Probability and Measure, Statistical Inference, Time Series, and Linear Models.

MSc in Mathematics | African Institute of Mathematical Sciences, Rwanda **2023–2024**

- Thesis: Retrospective Impact Quantification of Malaria Interventions in Ghana.
- Supervisors: Stephen Moore and Christian Selinger.

BSc in Statistics | Kwame Nkrumah University of Science and Technology, Ghana **2018–2022**

- Undergraduate thesis: Impacts of Government Expenditure on Economic Growth in Ghana.
- Supervisor: R. K. Avuglah, PhD.

RESEARCH AND TEACHING

Research Interests: Mathematical statistics, statistical inference, likelihood and GLR methods, time series, weak dependence, malaria modeling, biostatistics, Bayesian methods, and interpretable machine learning.

Current Research **2025–Present**

- Central Limit Theorems for Estimators in ARMA Models under Weak Dependence — theory development with empirical validation on financial and public health time series using R.
- Comparative Forecasting of Financial Time Series Using ARIMA, GARCH, Random Forest, and XGBoost Models — working paper focused on comparative forecasting accuracy using MAE, RMSE, and MAPE.
- Comparative Machine Learning Models for Diabetes Prediction — collaborative work using R mlr3 with attention to calibration, interpretability, and deployment.

Teaching Appointments | University of Nevada, Reno **2024–Present**

- Graduate Teaching Assistant, MATH 126: Precalculus I.
- Graduate Teaching Assistant, MATH 181: Calculus I.
- Instructor of Record, MATH 126-4001: Precalculus I.
- Instructor of Record, MATH 181: Calculus I.
- Graduate Teaching Assistant, STAT 152: Introduction to Statistics and Probability.
- Responsibilities include recitations, office hours, grading, assessment design, and course management using Canvas and Pearson MyLab.

Teaching Assistant / Instructor | KNUST, Department of Statistics and Actuarial Science **Nov 2022–Aug 2023**

- Supported teaching in Regression Analysis, Differential Equations, and Algebra.
- Prepared lecture notes and slides, guided students in research work, and supported grading and academic records.

SELECTED DIGITAL PRODUCTS AND CREATIVE WORK

- Acadelyn** | Academic discovery and networking platform **Recent**
- Designed an academic opportunity platform featuring advanced search filters and algorithmic recommendations. Streamlined the tracking of conference cycles for students and faculty through a custom-built management dashboard.
- Arkos School Management Cloud** | Education technology product **Recent**
- Built a web-based school management platform supporting student records, fees, assessments, reporting, and administrative workflows.
- Arkos POS Cloud** | Business operations product **Recent**
- Developed a modern sales, inventory, and reporting platform for small and growing organizations.
- Arkos Datateks and DataTechsTutorials** | Business and content platforms **Ongoing**
- Built and managed websites, software marketing assets, social media content, branded visuals, and technical learning content for business and education audiences.
- Digital Media and Creative Production** | Cross-platform work **Ongoing**
- Produced graphics, edited photos and videos, and managed social media communication for educational, business, and faith-based projects.

RESEARCH AND ANALYTICS EXPERIENCE

- MSc Thesis Researcher** | AIMS Rwanda **2023–2024**
- Quantified the retrospective impact of malaria interventions in Ghana using district-level geospatial data.
 - Built stochastic and deterministic transmission models and summarized findings for intervention targeting and planning.
- OpenMalaria Policy Simulations** | Geita, Tanzania **2024**
- Ran intervention scenarios in OpenMalaria using VecNet baselines and summarized outcomes for decision support.
- Technical Pricing, Machine Learning** **2023**
- Trained KNN, Random Forest, and XGBoost models on the freMPL3 dataset and evaluated performance using RMSE and R-squared.
 - Applied encoding, scaling, PDP, and SHAP for interpretation.
- Undergraduate Thesis, Time Series and Econometrics** | KNUST **2022**
- Conducted VAR and VECM analysis of government expenditure and GDP growth in Ghana.
 - Performed stationarity testing, lag selection, cointegration testing, model estimation, impulse response analysis, and FEVD.
- Selected Additional Projects** **2020–2022**
- Built an analytics dashboard for Ghana crime trends and produced national forecasts using ARIMA.
 - Developed a logistic regression classifier for counterfeit banknote detection in R.
 - Designed and analyzed a financial stress and academic performance study using ANOVA and two-sample t-tests.

PROFESSIONAL EXPERIENCE

- Database Developer and Consultant** | Independent Client Projects **2019–Present**
- Designed and deployed Microsoft Access and SQL database systems for schools and small businesses, from requirements gathering to implementation and handover.
 - Developed relational schemas, data-entry forms, queries, dashboards, and automated reports for operational and management use.
 - Selected projects include an HR database for Reliance Technical Co. in Kuwait and a company management system for MorePlex Company Ltd in Ghana.
 - Also delivered school, inventory, and sales systems for clients across Ghana, Sierra Leone, Mauritius, Ethiopia, and Guinea.
- Database Developer and Consultant** | PEKO Plaza, Kumasi, Ghana **Jun 2020–Apr 2021**
- Designed multi-division databases, migrated legacy spreadsheets into structured systems, and implemented backups, reporting queries, training, and documentation.

- Consolidated insurance claims across departments, cleaned anomalies, and produced monthly earnings summaries and dashboards.

TECHNICAL AND CREATIVE SKILLS

Statistics and Analytics: R, Python, SQL, SPSS, Stata, MATLAB, Power BI, Advanced Excel, Google Workspace

Methods: GLR, ANOVA, regression, ARIMA, ARMA, survival analysis, Bayesian basics, interpretable machine learning

Software, Systems, and Web Development: Microsoft Access, VBA, database design, ERD design, admin systems, website development, web platforms, cloud-style business systems, basic Git, LaTeX and Overleaf

Creative and Media: Graphic design, social media management, video editing, photo editing, branded digital content, technical and promotional content publishing

Applied Tools: OpenMalaria, geospatial data preparation

AWARDS AND LEADERSHIP

Awards and Honors	Leadership and Service
<ul style="list-style-type: none"> • Scholarship of Merit, University of Nevada, Reno, 2024 • Scholarship of Merit, AIMS Rwanda, 2023–2024 • Top 5 ranked PhD applicants, UNR cohort, 2024 • Most Outstanding Student, Great OSTECH, 2017 • Best ICT Student, 2015 	<ul style="list-style-type: none"> • Men’s Ministry Leader, PIWC Reno, 2025–Present • Academic Board Head, Science Students Association, KNUST, 2021–2022 • Deputy Electoral Commissioner, Ghana Association of Statistics Students, KNUST, 2020–2021 • Organizer of weekly department research seminars, KNUST

SELECTED CERTIFICATIONS AND WORKSHOPS

Power BI for Beginners (SkillUp by Simplilearn); Introduction to SQL (DataCamp); Website Design using WordPress (Copes IT Labs); Modern Statistics and Machine Learning for Global Health (AIMS); Data Analysis using Excel (Open Labs Ghana); MIM Conference, Rwanda; Modern Statistics and ML for Global Health, Rwanda.