

Benson Cyril Nana Boakye

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Summary

Data scientist and statistician with 4+ years of experience in machine learning, data analysis, and predictive modeling across biomedical research, experimental design, and public health. Proven expertise in statistical programming and clinical trials, with 2+ years of hands-on experience specializing in Python, R, SAS, and SQL, ensuring compliance with industry standards. Proactive and innovative, eager to apply theoretical knowledge and practical skills to deliver data-driven solutions that drive business growth, boost profit, and optimize operational efficiency.

Skills

Programming Languages: Python, R, SQL, SAS.

Machine Learning: Neural Networks, Tensorflow, SVM, Logistic Regression, Random Forest, PCA, Cross-validation

Statistical Methods: GLM, Bayesian Inference, Survival & Multivariate Analysis, Hypothesis Testing, linear Models

Tools & Technologies: Tableau, Excel, GCP, DESeq2, scRNA-seq, Data Structures, CDISC (SDTM, ADaM), MongoDB.

Experience

Statistical Consultant

September 2024 – June 2025

Oregon State University

Corvallis, Oregon

- Optimized statistical designs for 10+ biomedical studies, including RCTs and longitudinal studies, reducing required sample sizes by 20% while preserving statistical power and study integrity.
- Analyzed genomic data (RNA-seq) using R and Python, identifying 5 biomarkers and contributing to publications.
- Advised clients on analyzing immune responses to TB antigens and their links to malnutrition, using logistic and GLM's.
- Evaluated the correlation between breath condensate pH, reflux events, and tracheal aspirate pepsin levels using SAS.
- Applied logistic regression (GLM) to predict pollen fitness from genomic data, using LASSO for feature selection, improving model AUROC by 70% and interpretability.

Graduate Teaching Assistant

September 2023 – June 2025

Oregon State University

Corvallis, Oregon

- Introduced experimental design principles (randomization, blocking, factorial designs) to optimize data collection and analysis (ETL processes), improving students' ability to evaluate and apply research methodologies by 20%.
- Integrated SVMs, Decision Trees, and Python libraries to streamline practical exercises, cutting preparation time by 40%.
- Led recitation sessions for 500+ students on statistical methods using Python & Excel, boosting performance by 15%.
- Applied PCA and t-SNE for dimensionality reduction, enhancing model interpretability and revealing data clusters.
- Ensured confidentiality, evaluated and gave constructive feedback, fostered critical thinking, and promoted collaboration.

Actuarial Intern

September 2022 – December 2022

National Insurance Trust

Accra, Ghana

- Applied unsupervised machine learning in python for anomaly detection on 2TB of data, reducing process time by 20%.
- Built predictive models in Python(Tensorflow) to improve policyholder behavior, improving risk profiling accuracy 24%.
- Created visual reports using Power BI and Tableau, applied run-off triangles and pricing models to claims, generated insights to ascertain competitiveness, and communicated with executives to finalize statistical analyses and TLFs.
- Assisted in utilizing Monte Carlo simulation methods to optimize reinsurance strategies and deployed asset-liability management strategies to enhance investment portfolios resulting in a 5% higher ROI for clients.

Projects

Survival analysis of treatment efficacy in Primary Biliary Cirrhosis (PBC) | SAS



- Analyzed Cyclosporin A's effect on PBC survival using Kaplan-Meier, improving prediction accuracy by 15%.
- Implemented AFT and Cox models to assess survival, identifying high bilirubin and low albumin as key risk factors.

Predictive modeling and data analysis of breast cancer | Python



- Designed and assessed 5 classification models (Logistic Regression, KNN, Random Forest, SVM with RBF kernel, and Gradient Boosting), achieving up to 94% precision in breast cancer through diagnosis using FNA image features.
- Achieved 98.25% accuracy in classifying breast cancer as malignant or benign using an SVM with an RBF kernel.

Modeling Female Sex Worker distribution in Sub-Saharan Africa for HIV prevention | R-studio



- Deployed mixed-effects models (negative binomial, zero-inflated, poison, etc.) to analyze data, with an AIC of 2863.208.
- Applied REML estimation to confirm the inclusion of country, region, and dataYear as random effects ($p < 0.0001$).

Air quality analysis with R-shiny app | R-studio



- Developed an interactive app to explore PM2.5 levels in cities across the USA and India, allowing users to analyze trends.
- Added event annotations, like COVID-19, to highlight air quality changes and guide public health decisions..

Education

Oregon State University

Master of Science degree in Statistics

June 2025

Corvallis, Oregon

Kwame Nkrumah University of Science and Technology (KNUST)

Bachelor of Science in Actuarial Science

August 2018 – September 2022

Kumasi, Ghana