MICHAEL NSIAH-NIMO

DATA ANALYTICS PROFESSIONAL

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PROFESSIONAL SUMMARY

- Applied Statistician and Data Analyst with 7+ years of experience analyzing real-world EHR and insurance claims data to uncover cost variability, billing inefficiencies, and disparities in care—particularly within underserved U.S.–Mexico border populations.
- Proficient in risk modeling using GLMs, stratified regressions, and time-series analysis to identify high-cost drivers and the impact of clinical or policy changes on such drivers.
- Adept at delivering interactive dashboards (Tableau, Power BI, R Shiny) that empower stakeholders to explore patterns, optimize reimbursement strategies, and inform grant or operational decisions.
- Experienced in data integration and standardization from diverse sources to ensure high data quality, interoperability, and reproducible analytics.
- Contributed to 12+ large-scale federal data projects, delivering actionable insights, workflow automation, and decision-support tools that drive business efficiency and empower cross-functional teams.
- Equipped with strong DevOps and cloud engineering capabilities, including building CI/CD pipelines (GitHub Actions, Jenkins), provisioning infrastructure via Terraform and Ansible, and deploying containerized analytics environments on AWS (ECS, Lambda, RDS, S3).

SKILLS

- **Database:** Oracle, SQL Server, MySQL, Netezza
- **Data & Programming**: Python (pandas, scikit-learn, XGBoost), R, SQL, Bash, PowerShell
- **Databases**: SQL Server, MySQL
- **Data Engineering**: ETL scripting (YAML, JSON, Git Bash), data wrangling, automation workflows
- **Visualization**: Power BI, Tableau, R Shiny
- **Infrastructure & DevOps**: Terraform, CloudFormation, Ansible, Docker, Kubernetes, GitHub Actions, Jenkins
- **System Tools**: Linux/Windows Admin, Active Directory, DNS, DHCP, VMware

WORK HISTORY

Research Statistician – Data Analytics & DevOps, 01/2020 to Current
Border Biomedical Research Center (BBRC) – El Paso, TX

Data Analytics Focus

- Led modeling and experimentation using real-world data (EHR, insurance cost, clinical procedures) to uncover cost drivers and inform reimbursement decisions in health-related financial analytics.
- Applied GLMs, mixed-effects models, and causal inference techniques to evaluate interventions, predict procedure costs, and guide grant-funded public health strategies.
- Conducted A/B testing and time-series analysis to assess operational improvements, pricing changes, and treatment interventions.
- Built dashboards (Tableau, Power BI, R Shiny) to communicate insights across analytics and leadership teams.
- Collaborated with cross-functional teams of data scientists and analysts, engineers, and statisticians on enterprise-wide analytics projects, contributing to over $1M in project funding through data-driven strategies.
- Conducted quality control and validation of analytical outputs (tables, visualizations, reports), created data validation specifications (DVS), and ensured compliance with data standards for regulatory and business reporting.
- Designed analytics pipelines using Python and R to predict patient risk, cost overrun, and resource utilization.

DevOps & Automation

- Built CI/CD pipelines with GitHub Actions and Jenkins for analytics model deployment and monitoring.
- Provisioned AWS infrastructure (SageMaker, Lambda, RDS, S3) with Terraform, enabling reproducible analytics environments and automated deployment and scaling of data processing environments using Docker and Kubernetes.
- Implemented observability tools (Datadog, CloudWatch) to monitor data pipelines and improve system uptime.

FEATURED PROJECT

Healthcare Cost Analysis Using Real-World EHR and Insurance Claims Data
NIH-funded Project | BBRC, University of Texas at El Paso
Tools: Python, SQL, Power BI, R Shiny, GLMs, Stratified Regression

- Extracted and prepared multi-source patient data from NIH All of Us and PHIX Health Information Exchange, integrating EHR and claims data covering visits, labs, imaging, diagnoses, and payments.

- Modeled cost variability of common procedures (e.g., labs, imaging) across patient subgroups using GLMs and stratified regression, adjusting for demographic and comorbidity risk factors.
- Evaluated pre- and post-policy intervention effects using causal inference and time-series methods, enabling assessment of new clinic workflows and billing protocols.
- Designed interactive dashboards for clinicians and administrators to visualize high-cost drivers and equity gaps in access and reimbursement.
- Findings directly influenced clinic pricing transparency, funding proposals, and local care pathway redesigns to improve affordability and reduce disparity.

Data Analyst – Data Analytics and Experimentation | CoS Research, 07/2018 to 07/2020
University of Texas – El Paso, TX

- Performed data extraction, cleaning, and transformation of multi-source datasets (survey, transactional, and clinical records) to support exploratory analysis, predictive modeling, and machine learning pipelines.
- Conducted statistical and ML modeling in SAS, R, and Python, applying GLMs and tree-based methods (Random Forests, Gradient Boosting) to identify key drivers of health and socioeconomic outcomes.
- Developed and validated predictive models for outcome forecasting and risk stratification, leveraging cross-validation, feature selection, and dimensionality reduction techniques (PCA, LASSO).
- Led stratified and large-scale analyses to uncover disparities and trends, generating actionable insights for strategic planning and performance improvement initiatives.
- Contributed to experimental study design, hypothesis testing, and intervention evaluation using mixed-effects modeling and time-series forecasting approaches.
- Mentored junior analysts, providing training on SAS macros, Python/R machine learning libraries (scikit-learn, caret), and data visualization/BI tools to expand team analytics and modeling capabilities.

Cloud DevOps Engineer, 03/2022 to 07/2025
Technology Excellence Services – Remote (Freelance)

- Architected and administered secure, scalable AWS environments using EC2, S3, VPC, Route53, and IAM, optimized infrastructure for cost efficiency, high availability, and compliance with cloud security best practices
- Designed and automated CI/CD pipelines with GitHub Actions and CloudFormation, integrating Flyway for seamless database migrations and delivering faster, more reliable deployments across development, staging, and production
- Utilized CloudWatch and CloudTrail for comprehensive monitoring, setting alarms, and tracking user activities and API usage to maintain security and operational integrity
- Built cloud infrastructure for advanced workloads including machine learning and AI model pipelines, leveraging AWS services for large-scale data processing, model training, and inference while reducing compute and storage costs

SELECT PORTFOLIO PROJECTS

Quantifying Sales Uplift with Causal Impact Analysis - 🔗 View project

- **Context:** To measure the real-world impact of a marketing intervention on sales, I needed to isolate its effect from external trends and seasonal noise.
- **Action:** Applied CausalImpact (Bayesian structural time-series modeling) on customer sales data, estimating what sales would have been without the intervention.
- **Result:** Determined a statistically significant uplift, accurately attributing change to the campaign rather than external variation.
- **Growth / Next Steps:** Refined my ability to evaluate intervention effectiveness and ROI—directly applicable to modeling pricing or offer impacts in product analytics scenarios.

Assessing Campaign Performance Using Chi-Square(A/B) Test for Independence - 🔗 View project

- **Context**: A marketing team needed evidence on whether two different mailer designs drove different customer responses.
- **Action:** Applied Chi-Square hypothesis testing to compare mailer performance across customer segments, assessing whether observed differences were statistically significant.
- **Result:** Identified which mailer significantly outperformed the other in select demographics—enabling informed targeting decisions.
- **Growth / Next Steps:** Reinforced my foundational experiment analysis skills, especially segmentation — a key capability when evaluating pricing experiments or user A/B testing in fintech settings.

Education

MSc: Statistics, 2017
University of Texas - El Paso

BSc: Actuarial Science, 2014
Kwame Nkrumah University of Science and Technology