Richard D. Appiah

Objective Teaching & Research in Advanced Data Analytics & Data Science.

Education

PhD in Computational Analysis & Modeling (Computational Math)
Louisiana Tech University, Ruston, LA – Completed in August 2017

- **Research**: Spatiotemporal Subspace Feature Tracking by Mining Discriminatory Characteristics.

MS in Mathematics
Louisiana Tech University, Ruston, LA – Completed in November 2015

MS in Data Telecommunications & Networks
University of Salford, Salford, England, UK – Completed in July 2005

BS in Computer Science & Statistics (Dual)
University of Ghana, Accra, Ghana – Completed in May 2001

Publication

- "Tracking feature relevance with the plaid model in continuously changing datasets", *2017 IEEE International Conference on Knowledge Engineering and Applications*, London.

Relevant Skill Set

Data Modeling Tools:

- Proficient in R, Python, Tableau, Alteryx.
- Experienced with Planners Lab for Financial Data Modeling.

Database & Data Lake Technologies:

- Skilled in Microsoft SQL Server on Azure, SAS, Google Cloud Platform and MySQL Server.

Operating Systems & Development Platforms:

- Proficient in Ubuntu Linux and Windows.
- Development expertise in Java, C/C++, Visual Basic.
- Web development skills in HTML, CSS, PHP, and Joomla.

Major Machine Learning (ML) & AI Tools:

- Comprehensive knowledge of ML algorithms including GLMs, GAMs, Logistic, LASSO & Ridge Regression, SVM & PCA, KNN, K-Means, NLP, Decision Trees & Random Forest, GBM, XGBoost, Stochastic & Bayesian Models.
- Experienced in Artificial Neural Networks using Keras on TensorFlow 2.0 for Deep Learning in Python.
- Technical ability in utilizing ChatGPT and OpenAI platforms.

Design of Experiments:

- Advanced knowledge in Statistical Experiment Design.
- Expertise in Data Generation, and Systems Performance Evaluation.
- Proficiency in systematic process/products design improvement.

Employment History

Clinical Assistant Professor
University of North Texas, Denton, TX; 6/2024 - Present

- **Teaching Engagements**:
  - Data Engineering Technologies for Harvesting, Storing & Retrieval of Data using Cloud-Based Platforms.
  - Advanced Data Analytics for Effective EDAs and Data-Driven Decision Making.
  - Data Science and Machine Learning Concepts for Discovery & Learning with Big Data.
- **Research Interests:**
  - Advanced Data Analytics.
  - Data Science & Data Security.
  - Ethical AI.
  - Machine Learning Algorithm Design.

Data Scientist
Central Mutual Insurance, Van Wert, OH; 9/2017 – 05/2024

- **Advanced Analytics for Insurance Pricing**:
  - Developed and continue to maintain risk-specific premium models for both Homeowners & Auto Insurance utilizing GAM/GLM in R & Python, enhancing accurate rate factors computation by our actuaries.
  - Spearheaded price change impact analysis by extracting data from various sources and implemented premium computation algorithms, aiding in proposed premium distribution visualization for pricing models fine-tuning.
  - Implemented rating algorithms in R & Python, enabling actuarial comparisons for proposed rate hikes and optimized risk selection.
- **Competitive Market Analysis**:
  - Applied machine learning models in Python & R to evaluate quote data elements' significance, refining model features and aiding in the competitive pricing strategy.
  - Collaborated with our 3rd party partners, S&P Capital IQ and CAPE Analytics for new predictive factors inclusion in revised rating models.
- **New Business Analytics**:
  - Applied Kaplan-Meier estimator and Cox Proportional models to provide insights into our new business survivability across different dimensions of rating variables, supporting the company’s market segmentation & expansion efforts.

- **Onboarding & Continuous Learning Initiatives**:
  - Championed the onboarding and mentorship of new data analytics team members, fostering a culture of collaboration and knowledge transfer.
  - Engaged in consistent research on evolving machine learning algorithms, offering strategic data-driven business solution insights to both analytics and business teams.

Graduate/Research Assistant & Developer
Louisiana Tech University, Ruston, LA; 9/2012 - 8/2017

- **Teaching Engagements**:
  - CS Department:
    Taught graduate-level Data Mining/Machine Learning courses and graded advanced data mining projects.
  - Mathematics Department:
    Taught Linear Algebra lab sessions using MATLAB for the College of Engineering and Science undergraduate students.
- **Architectural Data Automation**:
  - Leveraged KNN & Shannon Entropy algorithms for a national architectural database, achieving a 100% hit rate for building material matches.
- **Web Development & Outreach**:
  - Spearheaded website redesign for the Computer Science & Electrical Engineering Programs using Joomla, resulting in a 62% increase in enrollment and improved user metrics.

Assistant Lecturer & Project Manager
University of Ghana, Accra, Ghana; 8/2009 - 9/2012

- **Teaching Engagements**:
  - Taught programming courses in C, C++, Java & Visual Basic, and managed extensive data analysis of the Ghana Population Census data of over 30 million records in SPSS.
  - Oversaw over 50 final-year undergraduate capstone computer science projects as a supervisor.
  - Maintained regular office hours, dedicating 10-15 hours each week to provide guidance and assistance to students.
  - Participated in a committee responsible for designing the curriculum of a new Bachelor of Science in Computer Science program in the Department of Computer Science.
- **Software Development Leadership**:

- Led a team to develop an enterprise software system for the Ghana Foreign Affairs Ministry, securing a significant project contract for the Computer Science Department.

Relevant Certifications

- **Professional Certifications:**
  - Python for Data Science & Machine Learning.
  - Tableau for Data Science & Business Analytics.
  - Mastering ChatGPT: Prompt Engineering, Plugins & Code Interpretation.
  - SAS Certified Associate: SQL Programming Fundamentals Using SAS 9.4.
  - Associate in General Insurance (AINS).