

Md Ariful Islam

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Summary

- Data-driven statistical analysis with expertise in R, Python, SQL, and R Shiny for data analysis, visualization, and reporting.
- Proficient in Bayesian analysis using MCMC and Gibbs sampling, including applications of hurdle, Poisson, and probit models to complex spatial data structures.
- Experienced in statistical modeling, spatial analysis, and machine learning, applied across diverse domains such as healthcare, economics, environmental studies, and social sciences.

Education

Master of Science in Statistics and Analytics, University of Arkansas, Fayetteville

Expected: Summer 2025

Professional Experience

Graduate Teaching Assistant

Aug 2023 – Present

University of Arkansas, Statistics and Analytics Program

- Instructed undergraduate math and statistics courses as primary instructor.
- Supervised quizzes and exams, maintaining academic integrity.
- Provided one-on-one tutoring at the Mathematics Resource and Teaching Center, assisting approximately 50 students per day in improving their skills.

Statistical Officer

September 2018 – Jul 2023

Bangladesh Bureau of Statistics (BBS)

- Participated in survey design and project planning for 12 projects, ensuring data quality and relevance.
- Analyzed data from nationwide surveys with sample sizes exceeding 10,000, producing reliable national and divisional estimates on poverty, unemployment, and socio-economic indicators.
- Used Python and SQL to analyze 10,000+ records, delivering insights for policy decisions.
- Created 6 R Shiny dashboards to enhance reporting and decision-making.

Executive Officer

September 2013 – August 2018

Mercantile Bank Ltd., Dhaka, Bangladesh

- Performed credit appraisals for over 150 loan applications, ensuring 100% compliance with regulatory standards and mitigating financial risk.
- Managed assets worth \$10M while maintaining a 95% client retention rate, contributing to a 12% increase in overall branch profitability.

Key Skills

- **Statistical Analysis:** Hypothesis testing, Regression analysis, Bayesian inference, Time series analysis, Spatial Statistics
- **Programming:** R, SQL, Python
- **Dashboard Development:** R Shiny for interactive data visualization
- **Dashboard Visualization:** ggplot, Plotly express, Matplotlib, Tableau, Excel
- **Machine Learning:** Random Forest, Decision Tree, K-Means Clustering, Support Vector Machine
- **Data Management:** Proficient in SQL, NoSQL, JSON, and MongoDB.

Selected Projects

- **Spatial Analysis:** Hierarchical Model for Multivariate Spatial Data with Application to Chronic Diseases: Hypertension and Diabetes.
- **Survival Analysis:** Determined whether psychotherapeutic drug use is associated with survival outcomes in patients with breast cancer and a mental health disorder.
- **Parameter Tuning:** Designed Monte Carlo simulations to tune parameters for a zero-inflated count response model.
- **R Shiny Dashboard:** Created several interactive platforms to visualize health and demographic data in real time.
- **Machine Learning Model:** Build random forest and gradient boosting models to predict company bankruptcy in Poland.
- **k-means clustering:** Employ k-means clustering to segment US consumers into distinct groups.
- **Time series model:** Create a GARCH time series model to predict asset volatility.

Training Participation

- Training on sample surveys and censuses conducted by BBS, ILO, UNICEF (January 2019–July 2022).
- Sampling Techniques and Practice conducted by BBS, devstat, IOE (January 2022).
- Special Foundation Training Course for BBS Officers conducted by Rural Development Academy, Bangladesh (June 2019).
- Credit Appraisal and Management conducted by Bangladesh Institute of Bank Management (October 2016).

Certifications

- Applied Data Science Lab, World Quant University (August 2024).
- DBeaver Essential Training, LinkedIn Learning (August 2024).
- Data Visualization with ggplot2, DataCamp (November 2023).
- Reporting with R Markdown, DataCamp (November 2023).