

Syif M. Bhuiyan

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Research Interests

Primary Focus: Computational Social Science, Algorithmic Accountability, Information Ethics (FAccT).

Secondary Focus: Platform Economics, Human-Centered AI, Digital Discourse Analysis.

- **Goal:** To bridge the gap between technical data science and social inquiry, applying methods like regression analysis, bias auditing, and causal inference to understand how information systems impact society.

Education

Southeast Missouri State University | Cape Girardeau, MO, USA | *Bachelor of Science (B.Sc.) in Economics & Finance* | Aug 2012 – Jan 2017

- **Major GPA:** 3.27/4.0

Research Experience

Project: Algorithmic Fairness & Information Asymmetry in Digital Finance | *Independent Researcher* |
Auditing fintech credit scoring models for gender bias using the Home Credit Default Risk dataset.

- **Research Question:** How do automated decision systems penalize marginalized groups, and can this be mitigated without compromising model utility?
- **Methodology:** Replicated a credit scoring pipeline using **Python (Scikit-learn)** and applied **Microsoft's Fairlearn** toolkit to audit for "Demographic Parity" constraints.
- **Key Findings:** The baseline Logistic Regression model predicted "High Risk" for 90.5% of males vs. 14.0% of females. By applying a ThresholdOptimizer, the selection rate was equalized to ~41.6% for both groups.

Project: The Airbnb Effect: Impact on NYC Housing Markets | *Independent Researcher* |
A Computational Social Science investigation into platform economics.

- **Methodology:** Built a data pipeline merging Inside Airbnb listing data with Zillow Housing Value Indices (ZHVI) across 164 neighborhoods. Utilized **OLS Regression in Python (Statsmodels)** to quantify correlations.
- **Key Findings:** Established a statistically significant relationship ($P < 0.000$) where every new Airbnb listing correlated with a \$585 increase in average annual home values, explaining ~10% of price variance ($R^2 = 0.097$).

Project: Automated Sentiment & Theme Extraction from Social Media | *Independent Researcher* |
Natural Language Processing (NLP) pipeline for unstructured text analysis.

- **Methodology:** Developed a pipeline using **Python (NLTK, VADER, Gensim)** to clean unstructured comments. Applied **Latent Dirichlet Allocation (LDA)** to extract latent discourse topics without prior labeling.
- **Key Findings:** Challenged assumptions of negative social media bias by identifying a 53.2% positive sentiment dominance in the corpus. Successfully clustered "messy" text into coherent topics (Celebration, Connection, Gratitude).

Professional Experience

WeGro Technologies Ltd. | Dhaka, Bangladesh *Project Manager (Agri-Fintech)* | May 2022 – Sep 2023

- **Research & Grant Writing:** Authored and secured grant proposals to fund data-driven initiatives for the agriculture sector.
- **Data Integration:** Integrated external datasets using **SQL** and **Python** to improve agricultural financing models.
- **Visualization:** Designed Power BI dashboards to monitor project KPIs, increasing transparency for stakeholders.

Self-Employed | Dhaka, Bangladesh *Portfolio Manager* | Jan 2015 – Present

- **Quantitative Analysis:** Applied technical and quantitative analysis using **Python (pandas, scikit-learn)** and **SQL** for financial forecasting and portfolio management.
- **Strategy:** Adapted investment strategies based on macroeconomic factors and industry trends.

British American Tobacco | Dhaka, Bangladesh *Intern, HR & Analytics* | Nov 2019 – Feb 2020

- **Visualization:** Created Tableau dashboards to visualize performance metrics and enable data-driven adjustments.
- **Automation:** Automated weekly sales reporting using Excel VBA, significantly reducing manual work hours.

MetLife | Dhaka, Bangladesh *Marketing Analytics Intern* | May 2019 – Aug 2019

- **Data Analysis:** Analyzed sales data using **SQL** and **Excel** to support marketing strategies.
- **Efficiency:** Automated data processing tasks with **Python scripts** to boost accuracy and efficiency.

Technical Skills

- **Programming & Scripting:** Python (Pandas, NumPy, Scikit-Learn, Statsmodels, Fairlearn), R, SQL (PostgreSQL, SQLite), Google Apps Script.
- **Data Analysis & Modeling:** OLS Regression, Hypothesis Testing, Causal Inference, Exploratory Data Analysis (EDA), NLP (VADER, LDA).
- **Visualization & BI:** Tableau, Power BI, Matplotlib, Seaborn, Advanced Excel (VBA, PivotTables).
- **Tools & Platforms:** Git/GitHub, JIRA, Google Data Studio.

Certifications

- **Google Advanced Data Analytics Professional Certificate**
- **Google Business Intelligence Certificate**
- **Data Analyst Associate Certificate (DataCamp)**
- **Data Literacy Certificate (DataCamp)**

References

- **Dr. William Weber, Ph.D.** *Professor of Economics* Southeast Missouri State University | Email: wlweber@semo.edu | Phone: +1 573-651-2946
- **Dr. Mohammad Riazuddin Molla** *Professor of Mathematics* University of Dhaka | Email: mriazmath@du.ac.bd | Phone: +880 1675720553
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