Md. Goffar Hossain

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Summary:

I am a dedicated Statistics graduate from Khulna University with a solid foundation in research, data analysis, and development-focused studies. My academic and project work has centered on critical areas like public health, nutrition, and social data, including impactful papers on the COVID-19 effects on food habits and antenatal care trends using BDHS data. Skilled in tools such as SPSS, SQL, Python, and KoBo Toolbox, I have led survey-based and secondary data research projects from design to publication. As General Secretary of Kristy, Khulna University's award-winning cultural club, I honed leadership, coordination, and communication skills. I am passionate about leveraging evidence-based research to drive inclusive, sustainable development and contribute meaningfully to community-focused initiatives.

Education:

Bachelor of Science in Statistics *Graduation: Jan 2025*
Khulna University, Khulna 9802, Bangladesh.

Higher Secondary Certificate (HSC) *July 2017 - Jun 2019*
Government Azizul Haque College, Bogura – 5800, Bangladesh.

Research Experience:

Research Assistant
Supervisor: Sutapa Dey Barna(KU)
Paper 1: *Impact of Covid-19 outbreak on the food habits and nutritional status of Khulna's citizens.*
Status: Submitted in Sage Journals.
Responsibilities:

- Conducted research to examine the effects of the COVID-19 pandemic on dietary habits and nutritional status in an urban population.
- Designed and administered structured questionnaires via **KoBo Toolbox**, collecting primary data on food consumption patterns and lifestyle changes.
- Performed data cleaning, coding, and analysis using **SPSS** and **Excel**, applying both descriptive and inferential statistics to assess BMI trends and nutritional shifts.

Paper 2: *Trends and Determinants of Antenatal Care Use and Quality in Bangladesh: Insights from Demographic and Health Survey Data.*
Status: Submitted in PLOS ONE.
Responsibilities:

- Analyzed nationally representative data from the **Bangladesh Demographic and Health Survey (BDHS)** to investigate trends and disparities in antenatal care (ANC) use and quality.
- Extracted and filtered complex datasets, and performed statistical analysis in **SPSS** and **Excel**.
- Applied logistic regression and trend analysis to explore associations between ANC uptake and socio-demographic variables.
- Contributed to literature review, methodology design, and manuscript writing for journal submission.

Undergraduate Thesis
Title: **Enhancing Fake News Detection Using Data Augmentation and Advanced Machine Learning Algorithms with Explainable AI (XAI)**
Supervisor: Sutapa Dey Barna(KU)

- **Objective**: Enhanced fake news detection by integrating data augmentation techniques with advanced machine learning algorithms, utilizing Explainable AI (XAI) for model transparency.
- **Tech Used**: NumPy, Pandas, Scikit-Learn, Machine Learning Algorithms (Logistic Regression, Decision Trees, XGBoost, AdaBoost, BERT), Data Augmentation (Synonym Substitution, Numerical Mapping), LIME.

Research on Topic Modeling and NLP (Ongoing)
Title: **Topic Modeling and Sentiment Analysis of Mass Movement Coverage: A Comparative Analysis from South Asian Print Media**
Supervisor: Dr. Mahdy Rahman Chowdhury(NSU)

- **Objective**: Conducted a comparative analysis of news coverage on the July Mass Uprising across Bangladesh, India, and Pakistan, focusing on sentiment distribution and topic modeling.
- **Tech Used**: Python, NumPy, Pandas, BeautifulSoup4, Sentiment analysis models, LLM prompting techniques (Few-shot, CoT, ToT), LDA for topic modeling, LIME for interpretability.

Skills:

Research Methods: Data Scraping, Surveying, Interviewing.
Languages: Python, R, SQL.
Frameworks: BERT, PyTorch.
Tools/Software: Git, PyCharm, CodeBlocks, Visual Studio Code, Google Collaboratory, LateX, SPSS, KoBo Toolbox.
Libraries: NumPy, Pandas, Matplotlib, NLTK, BeautifulSopu4, TensorFlow, Keras.

Technical Training:

- **Applied Machine Learning/Applied Deep Learning/Artificial Intelligence (Natural Language Processing) Program.**
  Mahdy Research Academy
  Supervisor: Dr. Mahdy Rahman Chowdhury(NSU)
  - Gained in-depth knowledge of **machine learning algorithms** and their applications in real-world problems.
  - Hands-on experience with **data preprocessing**, **feature engineering**, and applying both **machine learning** and **deep learning models** in Python.
  - Gained proficiency in **research tools** such as **LaTeX**, **draw.io**, and other research methodologies.
  - Developed problem-solving skills for **Natural Language Processing (NLP)** applications and how to approach these problems efficiently.
  - Learned how to formulate methodologies in a structured and constructive manner for research projects.

Extracurricular Activities:

General Secretary, Kristy – Cultural Organization, Khulna University. *Jan 2024 - Jan 2025*

- Elected as the chief student coordinator of Kristy, the leading cultural club at Khulna University.
- Successfully led a core team of 25+ members, overseeing planning, execution, and evaluation of all major cultural events.
- During this tenure, **Kristy was recognized as the "Best Cultural Organization of 2024"** by Khulna University.

Languages:

- Bengali – Native
- English – Professional Proficiency

References:

Sutapa Dey Barna
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