Arshadul Hoque

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EDUCATION

BSc. Engineering Degree in Computer Science and Engineering Chittagong, BD | August 2022
University of Chittagong
Coursework: Machine Learning, Artificial Intelligence, Algorithms, Data Structures
Undergraduate Thesis: "Sentiment Analysis of COVID-19 Vaccine Tweets using BERT" – Conducted sentiment analysis using natural language processing (NLP) techniques to assess public opinion on vaccine-related topics. Despite working with a limited dataset of only 130 entries, the model achieved an accuracy of 62%, demonstrating the potential of BERT for extracting insights from small datasets.

EXPERIENCE

THE COBALT PARTNERS | Prompt Engineer & Business Analyst Remote Freelancing | January 2025 – Present

- Designed and iteratively refined prompts for business process specifications, user stories and clarifications log achieving a **40% improvement** in accuracy.
- Streamlined workflows, reducing turnaround times by **10%**, and translating business requirements into actionable specifications.

UNIVERSITY OF CHITTAGONG | Research Assistant Chittagong, BD | December 2023 – Present

- Conducted multi-label classification using **BanglaBERT** for Bangladesh Cricket-related social media data, improving F1 scores to **0.73 and 0.69** for positive and neutral sentiments respectively.
- Applied **stratified k-fold cross-validation** and **focal loss** to address data imbalance, showcasing ability in model optimization.

KAGGLE COMPETITION: AUTOMATIC ESSAY SCORING | NLP Challenge Competitor Online Competition | April 2023 - July 2023

- Achieved **Top 80% rank (2141/2706)** by optimizing **DeBERTa** models with **statistical metric Quadratic Weighted Kappa.**
- **Score: 0.78**, demonstrating strong problem-solving skills in constrained environments.

KAGGLE COMPETITION: ROHLIK SALES FORECASTING CHALLENGE | Forecasting Challenge Competitor Online Competition | December 2024 - February 2025

- Built a LightGBM model with feature engineering , achieving a **WMAE of 23.55** and ranking **Top 56% (431/777 participants)**.
- Experimented with hyper-parameter tuning and transformer-based time series models to refine forecasts.

CERTIFICATIONS

Machine Learning Specialization – DeepLearning.AI and Stanford University, Coursera (June 2023)
Deep Learning Specialization – DeepLearning.AI, Coursera (September 2024)
Excel Skills for Business: Essentials – Macquarie University, Coursera (June 2022)
SQL for Data Science – University of California, Coursera (February 2023)

SKILLS

Programming: Python (NumPy, Pandas, Scikit-learn), SQL, Excel
Machine Learning: NLP (BERT, DeBERTa, BanglaBERT), Model Optimization
Tools & Platforms: Hugging Face, Jupyter Notebooks