N M EMRAN HUSSAIN

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EDUCATION

THE GEORGE WASHINGTON UNIVERSITY, School of Business **Washington, DC**
Master of Science, Business Analytics (STEM and GPA: 3.47) *December 2025*
Relevant Courses: Responsible Machine Learning, Practical Artificial Intelligence, Working with Large Dataset (Big Data), AI in Marketing, Customer Analytics & Text Analytics (NLP).

NORTH SOUTH UNIVERSITY, School of Business (STEM and GPA: 3.26) **Dhaka, Bangladesh**
Master of Business Administration *May 2023*
Relevant Courses: Marketing Research, Brand Management, Global Marketing, Marketing Strategy, Marketing Analytics.

AMERICAN INTERNATIONAL UNIVERSITY - BANGLADESH, School of Engineering **Dhaka, Bangladesh**
Bachelor of Science, Electrical and Electronics *March 2009*

TECHNICAL SKILLS

Programming & Core Libraries: Python (Pandas, NumPy, Scikit-learn, TensorFlow, Matplotlib), SQL, R (Tidyverse, ggplot2)
Machine Learning & AI: Generative AI & LLMs (RAG, Transformers), Deep Learning (TensorFlow/Keras, PyTorch), NLP (Sentiment Analysis, Word2Vec, FastText, Sentiment Analysis), Responsible AI (Fairness Metrics).
Tools & Platforms: Spark (PySpark), PostgreSQL, ETL Pipelines, Git/GitHub, Google Cloud Platform (GCP).
Business Strategy Analytics: A/B Testing, Customer Lifetime Value (CLV), Customer Acquisition Cost (CAC), AARRR Funnel, Churn Prediction, ROMI, ROI Analysis, Stakeholder Management, PowerBI.

ACADEMIC PROJECTS

Predictive-RAG Retention Engine | Gemini 2.0 Flash, Reinforcement Learning (LinUCB), ChromaDB, LangChain, GCP
- Engineered AI retention stack (LinUCB/Classification) that cut churn by 34%, driving $2M in incremental revenue.
- Automated e-commerce retention and decision support via LinUCB Bandits and Gemini-based RAG.

NLP Sentiment Analysis Optimization | FastText, Python, Autotune
- Engineered a sentiment pipeline boosting IMDb accuracy from 50% to 87.4% via optimized supervised learning.
- Standardized 25,000 text samples using FastText Autotune and N-grams to eliminate underfitting and normalize data.

Loan Default Prediction Model | H2O.ai, Python & Responsible AI
- Compared H2O.ai GLM/ANN models for loan defaults, optimizing a 0.15 threshold to slash financial risk.
- Engineered an L1/L2 pipeline for feature selection and used SHAP to audit model decisions for algorithmic fairness.

Handwritten Digit Classifier | TensorFlow, Keras & Computer Vision
- Architected a TensorFlow LeNet-5 CNN for MNIST digits, achieving 96.2% accuracy with high validation generalization.
- Optimized a multi-layer pipeline using sigmoid/tanh & MaxPooling to extract spatial features & mitigate vanishing gradients.

Fairness-Aware Mortgage Pricing Model | Explainable Boosting Machines (EBM) & XAI
- Engineered an EBM for high-priced mortgage loans, balancing a 0.78 AUC with federal Fair Lending standards.
- Mitigated bias via AIR analysis and fairness remediation while using extraction attacks to verify security.

D.C. Bikeshare Optimization & Forecasting | Python & Scikit-Learn
- Engineered predictive models (Gradient Boosting, SVM, Random Forest) to forecast urban mobility demand, prioritizing business-cost reduction over raw MSE.
- Optimized station logistics through unsupervised K-medoids clustering and multi-model classification to balance bike and dock availability.

PROFESSIONAL EXPERIENCE

AMPERE LTD. | Founder & CEO | Dhaka, Bangladesh | January 2019 – December 2019
- Founded an electronics startup, leading 15 employees across supply chain, marketing, finance and business development.
- Optimized supply chain and statistical KPI dashboards, driving 13% revenue and 10% market share growth.

ANRHUS & SHUZOS CO. | Assistant Manager | Dhaka, Bangladesh | June 2009 – December 2018
- Managed end-to-end supply chain logistics for engineering services, ensuring timely aftersales service delivery.
- Streamlined inventory tracking processes by 5%, reducing overhead costs by 3% & improving operational efficiency by 4%.

CERTIFICATION

- Data Analysis with R (Google)
- Intermediate R (Datacamp)