MD RAKIB HASAN

Graduated from the University of Dhaka, with 3 years of experience in data analytics and over 2 years of interdisciplinary quantitative & qualitative research in business and public health. Performance driven, seeking opportunities to enhance skills in problem solving to increase to profitability and productivity.

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Areas of Expertise

BUSINESS INTELLIGENCE

Business Intelligence (Power BI, Tableau)
Data Analysis (Python, R, SQL)
Customer Analytics

PROJECT MANAGEMENT

Project Planning & Coordination
Stakeholder Handling
Risk Management

PROCESS OPTIMIZATION

Sales Performance Metrics & Reporting
A/B Testing & Campaign Analysis
Process & Cost Optimization

DATA-DRIVEN DECISION MAKING

Data-Driven Sales Strategies
CRM Systems (Salesforce)
Predictive Analytics & Forecasting
Data Visualization (Power BI, Tableau)

CLOUD & TECHNOLOGY

Sales Automation
Data Integration & Pipeline
Amazon Web Services (AWS)
Google Cloud Platform (GCP)

ADDITIONAL TECHNICAL SKILLS

Communication & Presentation
Data Handling (Pandas, Numpy)
CI/CD Tools (Docker, Kubernetes)
Machine Learning (TensorFlow, PyTorch)

Certification / Training

- Mathematics for Machine Learning
- Google IT Support Professional
- Google IT Automation With Python
- Certified Peer Reviewer Elsevier
- Architecting Google Compute Engine
- Google Cloud: Cloud Architect
- DataOps with Apache Iceberg using Spark, Nessie, and Dremio

Extracurricular Activities

Secretary (Technical), **Geo-Biome Club University of Dhaka**

Student, **Stanford University Code In Place 2024**

Runnersup in Dhaka Division
BCB Young Tigers Cricket (2017)

Professional Experience

Stanford University; Code In Place 2025

Section Leader · March 2025 - Present

- Led the class of 9 international students to teach CS106A/B program of Stanford University Syllabus. Provided detailed feedback and grading on assignments and exams.
- Collaborating with Dr. Chris Piech & Dr. Mehran Sahami to enhance course materials.

Atomic Energy Center; Bangladesh Atomic Energy Commission

Research Assistant · Mar 2024 - Nov 2024

- Developed and deployed deep learning models using TensorFlow and Scikit-Learn for water quality forecasting, enhancing environmental monitoring of the Turag, Buriganga, Shitalakshya, Dhaleshwari, and Balu rivers.
- Analyzed water pollution dynamics and documented findings in 7+ study, contributing to 10+ journal articles.

University of Dhaka; Department of Soil, Water And Environment

Research Assistant · Mar 2022 - Nov 2024

- Led 15+ analytical chemistry and deep learning projects to assess the impact of soil, sediment, and water quality on human health, analyzing over 500 samples across the Gangetic Delta.
- Used 5+ mathematical and statistical approaches to improve soil organic carbon (SOC) model accuracy by 15%. Contributed to 7+ peer-reviewed journal articles.

Publications

Journal of Next Research, Elsevier (Under review)
Hasan, M. R., Rahman, A., Zubyer, S., & Jolly, D. Y. N. Comparative analysis of water quality forecasting of enhanced CNN, RNN, LSTM, GRU-based multivariate and univariate deep learning architectures for the urban Turag River.

Journal of Biological Science, University of Dhaka (Under review)
Uddin, M. J., Hasan, M. R., Arabi, F. Z., & Ali, A. Z. Spatial soil variability and carbon dynamics in the Moribund Delta of the Ganges of Bangladesh.

Journal of Environmental Geochemistry and Health, Elsevier
Rahman, A., Hasan, M. R., Zubyer, S., Jolly, Y. N., & Akter, S. Heavy metals and health risk assessment of Buriganga, Shityalakshya, Balu, Turag, Dhaleshwari river sediments and water around Dhaka.

Journal of Environmental Science Ecosystem, Elsevier
Hasan, M. R., Arabi, F. Z., Uddin, M. J., & Mohiuddin, A. S. M. The potential soil organic carbon stocks in Sundarbans tidal mangrove forest ecosystem of Bangladesh.

Educational Qualifications

University of Dhaka; *B.Sc in Soil, Water & Environment* · Jan 2020- Feb 2025

CGPA: 3.62/4.00;
Research Project: Health Risk Assessment from Heavy Metals in Dried Fish of Dhaka.

Higher Secondary Certificate (HSC) · Graduated in 2019
Letter Grade: A (Science), Government Bangla College

Secondary School Certificate (SSC) · Graduated in 2017
Letter Grade: A+ (Science), Lalmatia Housing Society School & College

Interpersonal Skills

Languages
English (Fluent)
Bengali (Native)
Hindi (Fluent)

Communication Skills
Expert in communication with senior leadership and decision making teams.

Programming (4Y)
Python   R
SQL   Bash

Database (3Y)
PostgreSQL   MongoDB
MySQL   SQLite

Data Handling (4Y)
Pandas   Numpy
A. Spark   Excel

Dashboarding / Plotting (3Y)
PowerBI   Tableau
DataStudio   Superset
Seaborn   Matplotlib

Machine Learning (3Y)
Scikit-Learn   TensorFlow
PyTorch   Spark MLib

Cloud Platform (3Y)
AWS   GCP
Azure   DigitalOcean

CI / CD Framework (2Y)
Docker   Kubernetes
Terraform   Github Action

Operating Platform (3Y)
Linux   Win Server
Unix

App Development (1Y)
Django   Flask

Project

Customer Behavior Analysis for E-Commerce Using Machine Learning

- Segmented customers into frequent buyers, occasional shoppers, and browsing customers using K-means and Agglomerative clustering for a Upwork client.
- Implemented marketing strategies, boosting engagement and conversion rates, resulting in a 21% profit increase.
- Applied algorithms and programming in 5 e-commerce apps. Tools used: Python, Pandas, Scikit-learn, Matplotlib, Seaborn.

Bank Customer Segmentation for Targeted Loan Marketing Using Power BI

- Analyzed bank customer data to identify loan-targeted segments based on gender, education, marital status, and age for a local bank (freelance project).
- 35% high-potential loan applicants were university graduates, and 40% loans were requested by middle-aged individuals.
- Boosted loan conversion rates by 18% through targeted customer segmentation, data and reporting pipeline was created using Power BI.

Data-Driven E-Commerce Business Analysis for Strategic Growth

- Analyzed e-commerce sales, profit, and customer behavior to optimize business strategies for 3 Fiverr client.
- Identified that consumer segment contributed 54% of profit, corporate region accounted for 28% of sales and revealed 15% temporal sales seasonal variation.
- Tableau live dashboards integrating with PostgreSQL and pipeline applied in 4 e-commerce sites.

Ground Water Arsenic Pollution Modeling Using Ensemble Techniques

- Analyzed groundwater from 909 wells to assess Arsenic pollution and developed a novel ensemble techniqueusing multi-scalar data fusion (soil, climatic, anthropogenic, satellite imagery) for prediction.
- The approach is expected to improve prediction accuracy by 5-10% compared to traditional deep learning models. The project was collaborated with Dr. Anwar Zahid* from the Institute of Water Modeling, BWDB on the project.

Heavy Metal Contamination and Health Risk Assessment in Dhaka's Rivers

- Led a team to analyze seasonal heavy metal concentrations (Cr, Ni, Cu, As, Cd, Pb) in water/sediments across 5 Dhaka rivers (Buriganga, Shitalakshya, Balu, Turag, Dhaleshwari) under supervision of Dr Yeasmin Nahar Jolly*.
- Identified Pb and Cu as primary pollutants, with winter concentrations exceeding WHO/USEPA limits by up to 300% due to reduced runoff.
- Quantified ecological and health risks using advanced indices (Igeo, PLI) and Monte Carlo simulations, revealing moderate-to-high carcinogenic risks from Pb/As via ingestion/dermal exposure.

All Other projects can be found on Github

References

Dr. Md. Akhter Hossain Khan
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State University of Bangladesh
vc@sub.edu.bd

Dr. ASM Mohiuddin
Chairman
Department of Soil Water And Environment
University of Dhaka
asm.mohiuddin@du.ac.bd

Dr. Yeasmin Nahar Jolly
Chief Scientific Officer
Atomic Energy Center
jolly_tipu@yahoo.com