

# MD RAKIB HASAN

An aspirational graduate, equipped with extensive data analysis knowledge to drive business growth. Gregarious and eager to connect with new people, enjoys continuously acquiring knowledge and applying it to solve business challenges. Diligent and driven by performance-based growth, seeking opportunities to apply skills in data analysis, customer segmentation, cloud platforms, and advanced problem-solving to contribute to business growth and operational efficiency.



## Contact Information

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## Areas of Expertise

### BUSINESS INTELLIGENCE

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

### DATA-DRIVEN DECISION MAKING

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

### PROJECT MANAGEMENT

Project Planning & Coordination  
Stakeholder Handling  
Risk Management

### CLOUD & TECHNOLOGY

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

### PROCESS OPTIMIZATION

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

### ADDITIONAL TECHNICAL SKILLS

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

## Certification

- Google IT Support Professional
- Google IT Automation With Python
- Google Cloud: Cloud Architect
- Mathematics for Machine Learning
- DataOps with Apache Iceberg using Spark, Nessie, and Dremio

## Educational Qualification

- BSc in Soil, Water And Environment, University of Dhaka** 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

## Professional Experience

### Atomic Energy Center; Bangladesh Atomic Energy Commission

- Research Associate 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.

### Department of Soil, Water And Environment, University of Dhaka

- Research Associate Mar 2023 - 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 on analytical and AI-driven solutions for environmental sustainability.

## Project

### Customer Behavior Analysis for E-Commerce Using Machine Learning

- Segmented customers into frequent buyers, occasional shoppers, and new/browsing customers using K-means and Agglomerative clustering for an 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.

### 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 the consumer segment contributed 54% of profit, and the corporate region accounted for 28% of sales.
- Revealed 15% seasonal variation in sales through time series analysis.
- Visualized insights in Tableau live dashboards integrating with PostgreSQL and pipeline applied in 4 e-commerce sites.

Extracurricular Activities

Section Leader (SL)  
**Stanford University**  
**Code In Place Programme (CIP 2025)**

Vice President (Technical)  
**EDAPHOS Research Society**

Technical Secretary  
**AstroBiology Society of Bangladesh**

Runnersup in Dhaka Division  
**BCB Young Tigers Cricket (2017)**

Interpersonal Skills

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

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

**Research & Development**  
➤ Business Intelligence  
➤ Consumer Base Prediction  
➤ Soil, Sediment, Water Quality  
➤ Remote Sensing & GIS

**Programming Languages**  
Python 4Y  
R 3Y  
SQL 3Y

**Dashboarding**  
Tableau 2Y  
PowerBI 2Y  
Google DataStudio 3Y

**Data Handling**  
Pandas 4Y  
Numpy 4Y  
Scipy 3Y

**Machine Learning**  
Scikit-Learn 4Y  
TensorFlow 4Y  
Pytorch 2Y

**App Development**  
Django 1.5Y  
Flask 1.5Y

Project

**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.

**Water Quality Modeling Using Enhanced CNN, RNN, LSTM, GRU of Turag** [🔗](#)  

- Analyzed Turag River water and developed a novel method for modeling dissolved oxygen (DO) and biological oxygen demand (BOD) using stacked CNN, RNN, LSTM, and GRU under atomic energy center project.
- Deep learning models outperformed machine learning models, improving accuracy by 3.88%, reducing errors by 7.41%, and increasing reliability by 95.56%.

**Ground Water Arsenic Pollution Modeling Using Ensemble Techniques**  

- Analyzed groundwater from 909 wells to assess Arsenic pollution and developed a novel ensemble technique using 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.
- Collaborated with Dr. Anwar Zahid from the Institute of Water Modeling, BWDB on the project.

All Other projects can be found on [Github](#) [🔗](#)

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 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.

**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.

References

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**Dr. Yeasmin Nahar Jolly**  
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