

# Md. Mahfuzul Islam

 01718615265  mahfuzulislam@iut-dhaka.edu  House no - 19B/3, Tikkapara, Mohammadpur, Dhaka

 LinkedIn  GitHub  Website

## Research Interests

AI | Machine Learning | Data Science | Power Electronics | Power and Energy Systems | Electric Vehicle | NLP

## Professional Experience

**Data Engineer** Nov 2025 – Present | Dhaka, Bangladesh  
Enact Business Solutions

- Built a Python (pandas/openpyxl) pipeline for **Ibrahim Cardiac Hospital**, processing ~70k patient records and 1M+ lab entries; standardized IDs/dates and produced a consistent, integrated dataset.
- Unified all sources (including mortality) into an analysis-ready version by reconciling rows/IDs, fixing date issues, handling outliers/duplicates, and completing end-to-end data quality checks.

**Research Engineer (AI & Data Science)** Nov 2024 – Apr 2025 | Dhaka, Bangladesh  
Advanced Intelligent Multidisciplinary Systems (AIMS) Lab, IRIIC,  
United International University (UIU)

- Contributed to the development of **Jotno.AI**, an AI platform leveraging NLP, Machine learning and speech biomarkers to improve the early detection of anxiety and depression in Bangladesh and Pakistan. (In collaboration with **Imperial College, London**  and **PHC Global, Pakistan** )
- Worked on **Susastho.AI** , an AI-powered health guidance system democratizing access to healthcare for 2.5 million people across rural & urban regions through symptom screening, risk assessment and triage for underserved populations.
- Authored proposals for **Wellcome Trust (GBP 4.99M)**, **Google AI Accelerator (USD 1.37M)**, and **GSMA (USD 337K)**, to secure funding for both projects to support their expansion and implementation.

## Education

**Islamic University of Technology**  Jan 2020 – Jun 2024 | Gazipur, Bangladesh  
B.Sc (Engg.) in Electrical and Electronic Engineering

- CGPA: **3.72 out of 4.00**
- Relevant Courses: AI & Machine learning, Biomedical Signal Processing, Control System Engineering, Power Electronics, Digital Electronics, VLSI Circuits I, Power System I & II, Energy Conversion I & II, and Micro-controller & assembly Language Programming.

## Research Experience

**Time-Domain Modeling and Simulation of Performance Electric Vehicle Powertrain with Variable Battery Sizing Configurations** 

- Undergrad Thesis.  
Comprehensive mathematical modeling and simulation of electric vehicle powertrains with different battery sizes. Used MATLAB & Simulink to analyze performance, efficiency, and range. Identified optimal battery configurations to enhance vehicle dynamics and energy management, contributing to advancements in EV technology.

**Survival Analysis of Breast Cancer Patients: A Population-Based Study from SEER** 

- Machine Learning Project  
Developed a machine learning model using Kaplan-Meier, Cox Proportional Hazard, and Random Survival Forest to predict breast cancer survival. Analyzed 4,000+ patient data, achieving a C-index of 0.752, aiding clinicians in informed treatment decisions based on survival risks. Implemented in Python using Scikit-learn.

## Publications

**Conference (1)**   
2023 International Conference on Electrical, Computer and Energy Technologies (ICECET). At: South Africa

- Survival Analysis of Breast Cancer Patients: A Population-Based Study from SEER**

## Projects

**Electrocardiogram Signal Denoising and Wiener Filtering Using Different Desired/Optimal Signals** 

Machine Learning, MATLAB

- Developed an ECG signal denoising system using Wiener filtering, synchronous averaging, and moving average techniques: improved signal-to-noise ratio (SNR) and QRS complex detection, enhancing diagnostic accuracy by removing artifacts.

## Anomaly Detection in Servers

Machine Learning, MATLAB

Developed a machine learning algorithm to detect anomalies in server performance using Gaussian distribution models. Implemented parameter estimation, threshold selection, and data visualization techniques in MATLAB for accurate anomaly detection in high-dimensional datasets.

## Bluetooth Interfacing with 8051 Microcontroller

MIDE 51, Assembly

Developed a Bluetooth-enabled system using an 8051 microcontroller to control LEDs and display messages on an LCD. The project involved programming the microcontroller for wireless command reception, display initialization, and executing actions based on Bluetooth data—demonstrated skills in embedded systems, serial communication, and real-time processing.

## Skills

### Programming

C/C++, Python, MATLAB.

### Data Analysis

Numpy, Pandas, Tensorflow, Scikit-learn, Pytorch.

### Documentation and Presentation

Microsoft Word, LaTeX, Canva, Powerpoint, Excel

### Modeling and Simulation

MATLAB & Simulink, Proteus, Microwind, PSIM, PSpice.

## Standardized Test Scores

### IELTS

Overall Band Score - 7.5

Listening - 7.5, Reading - 9, Writing - 6.5, Speaking - 6.5, CEFR Level - C1

## Trainings

### Institute of Nuclear Science and Technology

Jun 2023 | Gazipur, Bangladesh

Industrial Trainee

Weeklong sessions and practical demonstration on ITU TRIGA Mark-II Training and Research Reactor.

### Robi Axiata Ltd.

May 2023 | Dhaka, Bangladesh

Industrial Trainee

Sessions and demonstrations on communication system design.

### Bangladesh Power Development Board

May 2023 | Narshingdi, Bangladesh

Industrial trainee

Weeklong sessions and hands-on experience on Steam, Gas & Combined Cycle powerplants.

## Extracurricular Activities and Achievements

### Director of Operations

2023

Esonance 2023

Demonstrated my event management abilities by leading the EEE department at the Islamic University of Technology (IUT) in successfully hosting "Esonance" the largest university tech festival in Bangladesh.

### Vice Captain

2023

IUT EEE Cricket Team

Inter-Departmental Tournament, Organized by IUT Sports Central

### Chemistry Instructor

Jun 2020 – Dec 2022

Somikkhon Academic & Admission Care.

Taught Chemistry to Higher Secondary students and University Admission aspirants, simplifying complex concepts, preparing students for exams, and using modern tools to create an engaging learning environment.

### OIC Partial Scholarship

2020

Islamic University of Technology

Merit based scholarship worth 13,500 USD

### Champion

2017

10th Mathematical Olympiad Dinajpur

Higher Secondary Group, Organized by Dinajpur Science Academy

## References

**Prof. Dr. Md. Ashraful Hoque**, Vice Chancellor, Ahsanullah University of Science and Technology (AUST)

mahoque@iut-dhaka.edu, +880 1735-444474

**Mr. Quazi Nafees-Ul-Islam**, Assistant Professor,

Department of Electrical and Electronic Engineering, Islamic University of Technology (IUT)

quazinafees@iut-dhaka.edu, +8801778716060