

A S M NAZRUL ISLAM

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EDUCATION

Master of Science in Information and Communication Technology

Bangladesh University of Engineering and Technology (BUET)

2018 - Present

Dhaka, Bangladesh

GPA: 3.5/4

Bachelor of Science in Computer Science and Engineering

Chittagong University of Engineering and Technology (CUET)

2013 – 2017

Chittagong, Bangladesh

GPA: 3.45/4 (Position: 18/117)

Thesis: Design and Implementation of a Smartphone Based Multisensory Dynamic Fall Detection System

PROFESSIONAL EXPERIENCES

Biman Bangladesh Airlines Ltd.

Database Administrator

Jan 2021 – Present

Dhaka, Bangladesh

- Lead team of 5 DBA and Programmers, achieved **20% boost** in productivity through strategic task delegation.
- Applied machine learning to analyze large airline datasets, addressing challenges like flight delays, demand prediction and resource under-utilization.
- Conducted Exploratory Data Analysis (EDA) on heterogeneous sourced data to derive actionable insights like out-station performance, reservation status, PNR to VCR conversion from travel data batch (TDB).
- Optimized complex database queries for reporting and analysis, reducing query retrieval time by **30%**.
- **Reduced 60%** manual work of departments by introducing digitization /digitalization/digital transformation.
- Prepared the policy to tackle the challenges of 4th industrial revolution along with a five years workplan. 📄

Smart Technologies (BD) Ltd.

Data Engineer

Sep 2020 – Jan 2021

Dhaka, Bangladesh

- Worked on the Big Data team to migrate one of Telco giant of the country, Robi Network Performance Data to Hadoop ecosystem, Cloudera Data Platform.

MINZ IT Ltd

Web Developer Intern

Nov 2016

Dhaka, Bangladesh

- Learned about search engines, their optimization process (SEO) and full-stack web development.

RESEARCH EXPERIENCES

Deep Learning based Demand Forecasting Using Dual-Temporal Characteristics of Booking Data in the Airline Industry

Aug 2023 - Present

M.Sc. Thesis | Supervisor: Prof. Dr. Md. Liakot Ali, Prof. Dr. Md. Hasanul Kabir

- To prepare datasets from diverse sources (airline, meteorological and socio-economic data) relevant to Bangladesh.
- To design a DL model leveraging dual-temporal characteristics of booking data for accurate air travel demand forecasting.

Dimensionality Reduction of Network Intrusion Detection System Using Machine Learning

Mar 2024

Shafin-ul-Alam, M Shahir Rahman, A S M Nazrul Islam | Research Output 📄

- Used PCA, Wrapper Method, and Filter Method to reduce the dataset's dimensionality.
- Applied ML algorithms like SVM, ANN, LSTM and MLP to assess the impact of dimensionality reduction on NIDS performance.
- Assessed techniques performance using metrics like accuracy, precision, recall and F1 score to understand the trade-offs between computational efficiency and detection accuracy in network intrusion detection.

Design and Implementation of a Smartphone Based Multisensory Dynamic Fall Detection System

Nov 2017

A S M Nazrul Islam, Prof. Dr. Mohammad Ashfak Habib | Research Output 📄

- Integrated smartphone sensors to detect falls, distinguishing between free falls and human falls regardless of device position.
- Developed a monitoring module for instant communication with caregivers, including fall location.
- Created a dynamic training module to adjust fall detection thresholds based on user movement patterns.

TECHNICAL SKILLS

Programming Languages: Python, PHP, SQL






Databases: MySQL, Oracle, PostgreSQL

Web Technologies: HTML, CSS, JavaScript, jQuery, Ajax, Laravel Framework

Data Analysis: pandas, NumPy, scikit-learn

Data Visualization: Matplotlib, Seaborn, mpdf, amCharts, apexCharts, echarts, morris

SELECTED PROJECTS

Employee Attendance Dashboard <i>SQL, Laravel Framework</i> Git 	Jan 2024
<ul style="list-style-type: none">Designed and developed a real-time attendance dashboard that provides comprehensive insights across individual, section, department and organizational levels, significantly enhancing work-hour utilization.	
Reservation Status Dashabord <i>Python, pandas, Numpy, Laravel Framework, echarts, amCharts</i> Git 	Sep 2023
<ul style="list-style-type: none">Visualized route wise inventory status of the airline after integrating, cleaning and transforming data, enabling data-driven business decision taking, which resulted in 8% increase in inventory utilization.	
Out Station Performance Dashabord <i>Python, pandas, Numpy, Laravel, echarts, amCharts</i> Git 	Jul 2023
<ul style="list-style-type: none">Visualized comparative performance analysis of out stations by performing OLAP operations (Roll-Up, Slicing and Dicing) after cleaning and transforming the integrated data, resulting 15% increase in passenger ratio.	
Ground Support Equipment Management System <i>HTML, CSS, JS, Ajax, SQL, echarts, amCharts</i> Git 	Jan 2023
<ul style="list-style-type: none">Designed and developed a comprehensive system with interactive dashboard and reporting tool to optimize GSE management and serviceability, boosting efficiency by 40% through real-time performance monitoring.	
Customer Relationship Management System <i>HTML, CSS, JavaScript, Ajax, Laravel, REST API</i>	Oct 2022
<ul style="list-style-type: none">Developed the system to inform passengers of any change in flight schedule through SMS and Email by extracting them from daily batch raw data and updated the PNR by means of REST API.	
Flight Performance Dashboard <i>HTML, CSS, JavaScript, Ajax, Laravel, apexCharts, morris, maatwebsite</i>	Jun 2022
<ul style="list-style-type: none">Analyzed and visualized fight performance along with an interactive reporting tool by performing complex query operations on automatically uploaded cleaned and transformed data.	
Commercial Website of Biman Bangladesh Airlines <i>HTML, CSS, JavaScript, Ajax</i> Website 	Feb 2022
<ul style="list-style-type: none">Developed the commercial website and Integrated the ticket booking engine into the commercial website for enabling reservation, booking management, flight schedule, flight status and online check-in.	

MENTORING EXPERIENCES

Biman Bangladesh Airlines Ltd. <i>Dhaka, Bangladesh</i>	
<ul style="list-style-type: none">Mentored 3 programmers <i>Asif Ahmed, Muntasir Hossain, Shahir Rahman</i> on how to do requirement analysis prior to the system development to complete their assigned tasks.	Jul 2021 - Jun 2024
<ul style="list-style-type: none">Mentored intern <i>Ankur Shaha</i> on how to collect data and do analysis for Digital Marketing.	Apr 2022 - Jun 2022
<ul style="list-style-type: none">Mentored intern <i>Mahia Mizan</i> in data collection and analysis on building Airline Passenger Satisfaction Dashboard and finding patterns from Employees Attendance Data.	Nov 2021 - Jan 2022
Alor Pathshala <i>Chittagong, Bangladesh</i>	
<ul style="list-style-type: none">Mentored and taught 12 underprivileged kids starting from level-0 to level-10 for free around CUET campus in their personal and academic endeavours.	Apr 2014 - Dec 2017

LEADERSHIP

Innovation Officer <i>Biman Bangladesh Airlines Ltd.</i> <i>coordinating with the aviation ministry's innovation team and managing innovation activities in the organization</i>	2022 - Present
Team Lead <i>IT Division, Biman Bangladesh Airlines Ltd.</i> <i>in-house software development team</i>	2021 - 2024
Co-ordinator <i>Toys-are-yours, Chittagong Division</i> <i>a philanthropic initiative by the ex-cadets for the unprivileged kids</i>	2015 - 2017
Joint General Secretary <i>Chittagong University of Engineering and Technology</i> <i>greater noakhali student forum & association of cuetian ex-cadets</i>	2016 - 2017
Junior Prefect <i>Cumilla Cadet College, Cumilla</i> <i>mentored and managed fellow cadets in the military school</i>	2011

TALKS AND PRESENTATIONS

- Smart Office in Alignment with Smart Bangladesh**, *Bangladesh Airlines Training Center, Dhaka*, Dec 2022.
- Becoming a Smart Airline by means of Digital Transformation**, *Headquarters, Biman Bangladesh Airlines*, Sep 2022.
- Bringing Innovation to Workplace**, *Biman Flight Catering Center, Dhaka*, Apr 2022.
- Introduction to Big Data, Hadoop Ecosystem and CDP**, *Smart Technologies (BD) Ltd., Dhaka*, Oct 2020.

RECOGNITIONS & AWARDS

- Recognized by Biman Bangladesh Airlines' MD & CEO for implementing Lufthansa's Smart Flight Planning Solution (2023).
- CUET Merit Scholarship in all semesters for satisfactory result from 2013-2017.
- Bangladesh Government Scholarship in Talent Pool for outstanding Result in Secondary School Certificate Examination (2010).