MD. MOMINUL ISLAM

3x Microsoft Certified (Power BI Data Analyst, Fabric Analytics & Data Engineer)

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PROFESSIONAL EXPERIENCE

Machine Learning Engineer - Part Time, Fosholer Chikitsha   **March 2025 - Present**

- Built **CNN & ViT pipelines** in **PyTorch** for crop-disease classification with per-class F1/AUC reporting and targeted ablations; reduced overfitting with **augmentation, early stopping, dropout, and weight decay** validated on a held-out set.
- Deployed real-time inference with **Flask/FastAPI** on **Azure & Hugging Face Spaces** with autoscaling and latency/uptime monitoring.
- Delivered an LLM-powered **Bengali RAG chatbot** for 20k+ users using **Ollama & FAISS**, boosting relevance through retrieval and prompt tuning.
- Introduced **MLflow** model registry for experiment tracking, versioned releases and rollback.

Undergraduate Research Assistant, Daffodil International University   **November 2024 - Present**

- Conducted end-to-end **analysis & predictive modelling** on test anxiety and rural/community impact; used **Logistic Regression, Decision Trees, XGBoost, ensemble**s; applied **XAI (SHAP, CHAID, PDP).**
- Built reproducible pipelines in **Python & Power BI** for cleaning, feature engineering & cross-validation.
- Produced **dashboards & technical reports** turning complex results into clear decisions using **SWOT**; ran **t-tests, χ^2, ANOVA & cross-tabs** with tidy, auditable outputs.
- **Performed Likert & sentiment analysis**; thematic & content analysis for mixed-methods; co-designed surveys and led field data collection with quality checks & documentation.

Mentor, Grad Bunker Akaademy Ltd.   **September 2025 - Present**

- Develop and design lectures**,** slides, projects, assignments, and quizzes for courses in **SQL, Power BI, Python, Machine Learning, and Computer Vision.**
- Lead **live sessions** with code walkthroughs and project support for learners.

TECHNICAL SKILLS

- **Languages** - Python, SQL, JavaScript, HTML/CSS, Bash
- **Frameworks & Libraries** - Flask, Django, Pandas, NumPy, Scikit-learn, PyTorch, TensorFlow, Selenium
- **Machine & Deep Learning** - Classical ML, CNN, RNN/GRU/LSTM, Transfer Learning, Explainable AI
- **Generative AI & LLM** - OpenAI API, Hugging Face Transformers, RAG, Prompt Engineering
- **Databases & Storage** - PostgreSQL, MS SQL Server, SQLite, NoSQL, Vector Databases - FAISS
- **DevOps & Deployment -** Docker, CI/CD (GitHub Actions), MLflow (MLOps), Containerization
- **Cloud & Infra** - Microsoft Azure, Hugging Face,Fabric, Cloud Concepts (IaaS, PaaS, SaaS), Basic IaC
- **Software Architecture & API Design** - MVC, Micro-services, Design Patterns, RESTful API Design
- **Testing & QA** - Pytest, Unit & Integration Testing, Test-Driven Development
- **Visualization & BI** - Power BI, Matplotlib, Seaborn, Plotly, Dash, Canva Reports
- **Tools & Collaboration** - Git & GitHub, VS Code, Figma, Microsoft Office, Google Workspace

EDUCATION

B.Sc Computer Science and Engineering (Credits Completed : 125/148)   CGPA:3.99/4.00   **2022-2026**
Daffodil International University

Higher Secondary School Certificate (HSC)   GPA:5.00/5.00   **2019-2021**
Mohammadpur Preparatory School & College

JOURNAL PUBLICATIONS

Optimizing Alzheimer's Disease Prediction through Ensemble Learning and Feature Interpretability with SHAP-Based Feature Analysis. Alzheimer's & Dementia: Diagnosis, Assessment & Disease Monitoring, Wiley. (Q1; IF= 4.51) https://doi.org/10.1002/dad2.70162

Impact of Math Anxiety and General Anxiety on Academic Performance among Undergraduates in Bangladesh. Acta Psychologica, Elsevier. (Q1; IF = 2.7) https://doi.org/10.1016/j.actpsy.2025.105620

Explainable AI for Breast Cancer Detection: Biglycan Biomarker Classification with Transfer Learning, Under review 2025

Explainable Machine Learning for Predicting Hypertension in Elderly Tribal Populations of Bangladesh: A Cross-Sectional Study Using SHAP and XGBoost, Under review 2025

PROJECTS

Work4Sync: Human Resouce Management System   CRUD, Flask, RESTful API, Plotly, HTML/CSS
- Architected a production HRMS for SMEs centralising **leave, payroll, user/role admin & analytics** with **Flask + JWT REST APIs**. Secure data layer via **SQLAlchemy ORM;** responsive **UI with Bootstrap & Jinja2.**
- Built an interactive HR **analytics dashboard** in **Plotly Dash** and a fully **normalised (3 NF)** SQLAlchemy ORM schema. Design delivers efficient queries and strict referential integrity across employee, leave, and payroll data.
- Led an **Agile team** through **SRS drafting**, **UML/Gantt planning,** and **iterative delivery.** Produced thorough documentation and **modular Flask Blueprints** for seamless maintenance and expansion.

Data-Driven Insights: USA Job Market Analytics   Microsoft Fabric, Power BI , Python, Selenium
- Engineered **automated web scraping** solutions with **Python and Selenium** for large-scale **job market data extraction from indeed.**
- Implemented end-to-end **data processing pipeline** using **Microsoft Fabric** utilized **Medallion Architecture(dataflows, pipelines, Lakehouses, warehouses)** for robust data transformation.
- Developed **interactive Power BI dashboards** and **analytical models to visualize market insights.**

PriceFlow: A Daily Market Scraper & Time Series Modeling   Selenium, Flask, Sklearn, PyTorch
- Developed a **Flask-Python web app** to ingest and store **daily market prices** from the Department of Agricultural Marketing.
- Applied **Isolation Forest for anomaly detection** and trained a **LSTM utilizing PyTorch to forecast future price trends.**

CERTIFICATIONS

Microsoft Certified: Power BI Data Analyst Associate - Microsoft
- PowerBI, DAX, Power Query, Data Analysis

Microsoft Certified: Fabric Analytics/Data Engineer Associate - Microsoft
- Fabric, Data Modeling, ETL/ELT, Data Architecture

MySQL Specialist - Maven Analytics
- SQL, DBA, Data Analysis, Marketing & Web Analytics

IBM AI Engineering - IBM, Coursera
- Machine Learning, Deep Learning, Tensorflow, PyTorch

Applied AI Lab: Deep Learning for Computer Vision - WorldQuant University
- PyTorch, Computer Vision, Transfer Learning, YOLO, GANs

Applied Data Science Lab - WorldQuant University
- Statistical Testing, A/B Testing, Financial Modeling, Esemble Learning

Data Science Career Track - Data Science 365
- Probability, Statistics , Machine Learning , SQL , Storytelling

TRAINING / WORKSHOPS

4 Days Hands-On Data Analytics Engineering Training By Datacrafters , HRDI

- Gained knowledge of key components, **Data Pipelines, Dataflow Gen2, OneLake, Lakehouse, and Warehouse.**
- Developed skills in **data ingestion, transformation, and visualization** using **Power BI and DAX.**
- Gained experience with advanced tools like **Tabular Editor and DAX Studio** for **performance optimization.**

Mastering Web Scraping By Data Science Club

- Acquired **web scraping skills**, including **data extraction from websites and APIs.**
- Gained hands-on experience using **Scrapy and Selenium** for real-world projects.

HONOR / AWARDS

Dean's List Award – Daffodil International University
Recognised on the Dean's List for academic excellence, discipline, exemplary attendance and active extracurriculars.

Merit-based Scholarship – Daffodil International University
Awarded for maintaining a 4.00 out of 4.00 CGPA over six consecutive semesters.

NETWORKS & MEMBERSHIPS

Research Assistant, NLP and ML Lab, Daffodil International University

Executive Member, Data Science Lab, Daffodil International University

REFERENCES

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