MAHIMA AHSAN

LinkedIn: www.linkedin.com/in/mahima-ahsan | Github: https://github.com/MahiAh19

E-mail: mahima.ahsan19@gmail.com

TECHNICAL SKILLS

Data Visualization: SQL, Seaborn, Matplotlib, PowerBI, Excel

Programming: C++, Python, Java, Assembly Language

Frameworks: Pytorch, Tensorflow, Scikit-Learn, Django

Languages: Bengali, French, English, Arabic, Hindi

EDUCATION

B.Sc in Computer Science and Engineering Oct, 2020- Dec, 2022
North South University, Dhaka
CGPA 3.57 out of 4

B.E in Computer Engineering Sep, 2018 - May, 2020
University of Wollongong, Dubai

RESEARCH PROJECTS

Classifying Bangla Health Misinformation on Social Media Platforms using Machine Learning – (View project here) Sep, 2022 – May, 2023

- Manually scraped and prepared a dataset of 2000 health related posts in Bangla
- Preprocessed the data using NLP techniques.
- Trained different machine learning models like SVM, Random Forest, etc. to compare performance for accurately validating health related social media posts

Recognizing Bangla handwritten texts using knowledge distillation Feb, 2022 – June, 2023

- Worked with two large Bangla handwritten word-level datasets
- Improved a novel knowledge distillation model called LILABOTI to improve minor classes recognition
- Conducted inter-dataset testing and evaluation against baseline model
- Used appropriate evaluation metrics such as CRR, WRR, NED and F1-scores to compare the results and determine the effectiveness of knowledge distillation in addressing the class imbalance problem.

Capstone Project – 'Structured State Space sequence (S4) model in Action Recognition Tasks'. Feb, 2022 – Dec, 2022

- Performed EDA on action recognition datasets using Python libraries such as pandas, NumPy, Seaborn and matplotlib.
- Worked with the Structured State Spaces sequence (S4) model and its variations (S4D and SaShiMi models) for Action Recognition task.
- Investigated the benefits and potential improvements of using S4 over traditional models like Transformers and RNNs
- Explored different strategies to fine-tune and optimize the performance of the S4 model.

Efficient Data Pruning in Deep Learning for Optimized Training May, 2023

- Implemented selective data pruning in deep learning, focusing on training efficiency and model accuracy.
- Utilized a self-guided approach to identify and train on key data batches, achieving equal accuracy with 20% less data than conventional training methods.

WORK EXPERIENCE

Data Analyst   Jan, 2023 – Present
Advanced Chemical Industries (ACI), Dhaka

Responsibilities include:
- Project Management and Requirement analysis– Collaborating with stakeholders to identify their information needs and requirements, and translating them into technical specifications for data analysis and reporting while ensuring timely deliverables.
- Advanced Data Analysis: Employing techniques like clustering, time series analysis, and predictions to discover patterns and relationships in complex data sets.
- Data Visualization– Creating visually appealing and informative charts, graphs, and dashboards using PowerBI to present data in a meaningful way for stakeholders

Tools used: PowerBI, Python, MySQL, MS Excel and Power Query,

Software Developer   Apr, 2023 – Aug, 2023
Tourism Point, Dhaka

- Developed the back end infrastructure using Django REST Framework, including API creation, database management, and security implementation.
- Designed and enhanced the front end, focusing on user-friendly interfaces, responsive design, and improved user experiences.
- Improved accessibility and convenience for tourists.

Tools used: Python, Django, PostgreSQL, Bootstrap and HTML

Software Designing and Development (Remote)   Sep, 2022 – Mar, 2023
Best Canadian Immigration, Canada

- Responsibilities include designing their website's frontend and user experience and maintaining their website

Tools used: Figma, Node.js and React

Software Development Internship   Jun, 2022 – Sep, 2022
Technohaven Company Ltd., Dhaka

- Designed Prototypes of User Experience for various web-based platforms including e-commerce for pharmaceuticals and digital banking with cryptocurrency.
- Created reports and conducted detailed R&D on process flow and microservices architecture for implementation.

PUBLICATIONS

Conference papers

P. Rahman, E. Sarker, M. Ahsan, I. T. Naheen and F. Bin Ali, "Classifying Bangla Health Misinformation from   2023
Social Media Using Machine Learning," 2023 International Conference on Machine Learning and
Cybernetics (ICMLC), Adelaide, Australia, 2023, pp. 114-119, doi: 10.1109/ICMLC58545.2023.10327937.

Working papers

Shahjahan, T., **Ahsan, M.**, Islam, M., Hossain, M., Rahman, F., Nabeel, M., 'BORO-LILABOTI – Building
of Robust Orders for Leveraging Isolated Letter Accumulations By Ordering Teacher Insights for
Bangla Handwriting Recognition' – (Paper under review)

Ahsan, M., Sarker, E., Rahman, P., Islam, M., Roy, K., Nabeel, M., 'FPS does increase performance:
Video Action Recognition with Structured State Spaces'

Hossain, M., **Ahsan, M.**,'Understanding Economic disruption in developing countries due to
generative AI implementation in first-world countries'

KEY ACHIEVEMENTS

Grand Finalists (Top 10) – Robi Datathon 3.0   May, 2024

Paper presentation, 'Classifying Bangla Health Misinformation from Social Media Platforms using Machine Learning', 22nd International Conference on Machine Learning and Cybernetics (*ICMLC*) 2023   May, 2023

Grand Finalists - Skitto Hackathon, Grameenphone   Sep, 2022

Secured Third place at the Innovation fair conducted by the University of Wollongong in Dubai for the project "Reverse Vending Machine"   May, 2020

Outstanding Academic Excellence Scholarship holder at the University of Wollongong, Dubai   Sep, 2018

PREVIOUS PROJECTS

Recipe App using Django Rest Framework   March, 2023
- Developed the back-end for this app using Django and also Dockerized the project.
- Made use of test-driven programming by adding unit tests.
- Used PostgreSQL for database management

Airline Management System   May, 2022
- used PHP for back-end programming and made a MySQL database to store flight-related data
- made use of HTML for front-end programming

Parking Management System   Oct, 2022
- Used a micro-controller to control entry and exit points of the parking space
- Used assembly language to create different components of the parking system like number of parking space available and etc.

Covid-19 Online Vaccine Registration Portal   Sep, 2021
- Designed a user interface using Java-FX that mimics the online vaccine registration process.

MIPS Datapath Design   Feb, 2021
- Planned and implemented an instruction set architecture with the help of an assembler.
- Used Logisim, Java and Assembly Language

Reverse vending machine - (Underline**View Project demo here**)   May, 2020
- Designed and programmed a vending machine that takes in cans and plastic bottles and rewards the user with coupons.
- Worked with Multisim and Arduino Uno for this project

EXTRACURRICULARS

Special Education Teacher at St. Mary's Catholic High School, Dubai   Sep, 2017- May, 2018

Executive member Bangla Express and editor of the Student Express Magazine, Dubai   July, 2016 -Jan, 2020

REFERENCES

Dr. Nabeel Mohammed
Associate Professor
North South University, Bangladesh
Email:
nabeel.mohammed@northsouth.edu

Dr. Preetom Nag
Associate Professor
North South University, Bangladesh
Email:
preetom.nag@northsouth.edu

Dr. Md Mosaddek Khan
Associate Professor (Adjunct)
North South University, Bangladesh
Email:
mosaddek.khan@northsouth.edu