

Wahid Mahmood

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Research Interest

Machine Learning, LLM, Remote Sensing, Computer Vision, Time Series Forecasting.

Education

Khulna University of Engineering & Technology (KUET) Jan 2019 – Feb 2024
B.Sc in Computer Science and Engineering (CSE)

- GPA: 3.53/4.0 (**Transcript**)
- **Coursework:** NLP, Linear Algebra, Statistics, Data Mining, Image Processing and Computer Vision.

Publications

W. Mahmood & S. M. M. Ahsan, "A Semi-Supervised Approach For Detecting Agricultural Land Reduction In Bangladesh Using Satellite Images." Sep 2024

IEEE International Conference on Computing, Communication, and Intelligent Systems (COMPAS), 2024. DOI: [10.1109/COMPAS60761.2024.10795941](https://doi.org/10.1109/COMPAS60761.2024.10795941)

- Developed a novel semi-supervised approach for agricultural land change detection, which significantly reduced the time and hardship required for manual annotation.
- Further evaluated the created dataset with other deep learning methodologies.

W. Mahmood, T. Joty & S. M. M. Ahsan, "NSNUNet: A Neighbourhood Attention Based Siamese Nested Unet for Change Detection using Satellite Images ." Dec 2024

IEEE International Conference on Computer and Information Technology (ICCIT), 2024. DOI: [10.1109/ICCIT64611.2024.11022454](https://doi.org/10.1109/ICCIT64611.2024.11022454)

- Proposed a novel neighborhood attention based UNet architecture, improving accuracy and efficiency in remote sensing change detection.

Thesis

Study on Agricultural Land Reduction in Bangladesh using Satellite Images Mar 2024

- Collected and preprocessed raw remote sensing image over the area of Bangladesh from Sentinel-2 satellite.
- Created agricultural land change detection dataset consisting over 500 image pairs over the area of Bangladesh.
- Explored multiple ML techniques (XGBoost, SVM) and extended the open sourced framework called Open-CD.

Experience

Junior Machine Learning Engineer, ReliSource – Dhaka, BD June 2024 – Current

- **AI Chatbot:** RAG based customer service AI Chatbot using Langchain, FastAPI and OpenAI, which achieved 4-second response time, including source citation and message streaming by implementing efficient retrieval and answer generation workflows.
- **Medical Inventory Demand Forecasting:** An effective medical inventory demand forecasting pipeline automates the prediction of medication needs using limited historical time-series data. Enhanced operational efficiency using multi step approach including temporal analysis, feature engineering and finally utilize agentic AI to generate actionable restocking recommendations.
- **Drug Discovery Pipeline:** ML-based drug discovery pipeline to screen and validate potential drug candidates including ADMET analysis, utilizing tools like AlphaFold, DeepChem, Biopython, RDKit etc.
- **PDF Parsing:** Created a PDF parsing pipeline, which will extract necessary information from pdf using Data Embedding and LLM and store it on excel.

Projects

Intent Based Product Search

Mar 2025

- A product search system for e-commerce sites which can detect the user's intent using search history and query optimization and provide the most optimal search results.
- Used finetuned model of llama 3.2 1B instruct and hybrid search for retrieving products with 2 sec latency.
- Tools Used: Langchain, FastAPI, Langsmith, PGVector, Ollama, Docker and Redis.

Open-CD

Feb 2024

- Modified version of the open-source change detection framework named Open-CD.
- Add the feature of loading images with more than 3 channels and running all the models on a specific dataset.
- Tools Used: Python, OpenMM, Rasterio.

DOKAN KOI?

July 2023

- A Flutter-based e-commerce app connecting users with the best nearby stores and stores with all the customers of the area.
- Features include shop location tracking, real-time updates, and notifications by utilizing Firebase for data storage, authentication, and file storage.
- Tools Used: Flutter, Firebase

SCORE INSIDE

Sep 2022

- An Android app that shows information about any football league's fixtures, standings, results, match details, etc. fetched from a REST API named SportDataApi.
- It uses RESTful libraries such as Retrofit2, Picasso, etc. to parse data.
- Tools Used: Java, Android Studio.

Skills

Languages: Python, C/C++, SQL, Java

Framework: TensorFlow, PyTorch, Scikit-learn, statsmodels, LangChain, FastAPI, Flutter, Transformer.

Database: MySQL, PostgreSQL, Oracle, Redis, Snowflake, Databricks.

Others: Ollama, Apache Spark, Git and version control, nginx, MLflow

Soft Skill: Dedicated, Hardworking, Punctual, Responsible.

Standardized Test Scores

International English Language Testing System (IELTS): 7.5 (overall)

Aug 2025

Achievements

Deans Award (Offered to average GPA of 3.75 or above achievers)

2019 – 2020

- Awarded for academic excellence by achieving a GPA of 3.83.

7th at Intra KUET Programming Contest

2022

- Placed 7th out of 85 competing teams.

5th at Poridhi Presents AI Engineering Hackthon

2025

- Placed 5th out of 80 competing teams.

Online Competitive Programming

2019-2023

- **Codeforces:** Specialist, solved over **650** problem with max rating of **1493**.

- **Codechef:** 4 star coder, with a max rating of **1864**.