

# MD BIKASUZZAMAN

📍 Bangladesh

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🌐 [Linkedin](#)

🐙 [Github](#)

🔗 [GitLab](#)

📁 [Portfolio](#)

## EDUCATION

**Islamic University, Bangladesh**

*Bachelor of Engineering in Information and Communication Technology*

**Jan 2018 – Jun 2023**

**CGPA - 3.45 out of 4.00**

## EXPERIENCE

**Machine Learning Engineer**

*Business Automation Ltd.*

**Nov 2023 - Present**

*Bangladesh*

- Developing advanced solutions in Generative AI, Computer Vision, NLP, and Deep Learning. Contributing to the development of the GenAI model on custom data.
- Built VLM OCR to digitize handwritten prescriptions; 0.095 CER, 2.28s inference time, cut workload by 52.68%, aiding 50K+ patients.
- Abstract Text Summarization for each Employee's One-Month Task Description.
- Implemented MLOps pipelines for production, ensuring seamless deployment, monitoring, and maintenance of ML models. Enabled automation, scalability, and continuous optimization to enhance model performance.

**Machine Learning Intern**

*Deshlink Limited*

**July 2023 - Oct 2023**

*Dhaka, Bangladesh*

- Worked as a Machine Learning Intern focused on developing algorithms, performing data preprocessing, EDA, feature engineering, and hyperparameter tuning to enhance model performance & built APIs using FastAPI. Utilized analytics and statistical models to extract insights from complex datasets.

**Research Assistant**

*ICE Innovation Lab*

**Jan 2019 - Feb 2023**

*Islamic University, Bangladesh*

- Performed R&D in Computer Vision, collaborating with the IU Vision Team to explore and implement cutting-edge methodologies.

## TECHNICAL SKILLS

**AI Stack:** MLOps, Deep Learning, Computer Vision, Natural Language Processing, GenAI, VLM

**Languages & Frameworks:** Python, Matlab, C, C++, SQL, Django, Flask, FastAPI

**Library:** Tensorflow, Scikit-learn, Pytorch, Transformers, OpenCV, Pandas, Matplotlib, Nltk, Langchain

**Generative AI:** Prompt Engineering, Large Language Model (LLM), RAG, Florence 2, Llama 3.2, OpenAI, Gemini, Ollama, Azure OpenAI, Grok Api, Open-WebUI, Vector Database (Pinecone, ChromaDB, Faiss)

**MLOps:** MLflow, Comet ML, Linux, Git, Github Actions, CI/CD, Docker, Jenkins, Kubernetes, argoCD, Terraform, Ansible, Helm, Prometheus, Grafana, XAI

## RESEARCH

- **Bikasuzzaman M, Polok AP, Saha B. [A Transformer-Based Approach for Summarizing Employee Logs](#).** Submitted to Progress in Artificial Intelligence, Springer.

## PROJECTS

**Handwritten Prescription Digitalization using Layout Analysis and OCR** [🔗](#) | [CV](#), [VLM](#)

- Developed a vision-based layout segmentation and VLM OCR system to digitize handwritten prescriptions, achieving 0.095 CER for drug names and 2.28s inference time. Automated extraction of IDs, diagnoses, quantities, and patient histories, reducing human workload by 52.68% and improving healthcare record-keeping for 50K+ patients. [🐙 Github](#)

**ChatBot with Neo4j & Knowledge Graph RAG System** [🔗](#) | [Neo4j](#), [Knowledge Graph](#), [Llama3.2](#)

- Designed and implemented a chatbot powered by Neo4j and knowledge graphs, integrating hybrid search mechanisms to enhance query accuracy across PDF, CSV, and TXT datasets. Enabled efficient user interactions with tailored, context-aware responses, demonstrating scalability and robust knowledge retrieval. [🐙 Github](#)

## Queue Waiting Time Prediction in Banking System with MLOps [↗](#) ML, RF, XGBoost

- Engineered a machine learning model to predict queue waiting times in banking systems with 97.09% accuracy and a loss of 12.99. Leveraged MLOps pipelines for automated deployment, monitoring, and scaling, significantly enhancing banking operations and customer satisfaction. [🔗 GitHub](#)

## Abstract Text Summarization using Large Language Model (LLM) [↗](#) | Google Pegasus Model

- Implemented an abstract text summarization system using Google Pegasus LLM to automate employee log summaries. Reduced manual review time by providing concise overviews of key points and challenges, enhancing managerial decision-making efficiency and accuracy. [🔗 GitHub](#)

## Automated Passport Number Tracking Using Image Verification & Identification [↗](#) DL

- Built an automated image verification system using VGGFace and MTCNN for precise face detection and passport tracking. Designed a self-updating training mechanism triggered by new data inputs, ensuring continuous model optimization and peak performance. [🔗 GitHub](#)

## Image Super Resolution Based on Generative Adversarial Networks (GANs) [↗](#) | SRGAN, DL

- Designed and trained a Super-Resolution Generative Adversarial Network (SRGAN) to upscale low-resolution images into high-quality counterparts. Enhanced image clarity and detail, achieving significant visual improvements for various applications in media and healthcare. [🔗 GitHub](#)

## Forecasting Retail Store Revenue [↗](#) | LSTM, ARIMA, SARIMA, RF, EDA

- Developed predictive models using SARIMA, LSTM, and Random Forest to forecast monthly retail sales. Analyzed historical data and seasonal trends, achieving precise revenue predictions that guided strategic planning and inventory optimization. [🔗 GitHub](#)

## Name Entity Recognition (NER) with MISTRAL, BERT, and FLAN T5 [↗](#) | LLM, Unsloth

- Fine-tuned BERT, Mistral, and Flan-T5 models for Named Entity Recognition (NER) on Bangla and Cyber Security datasets. Achieved 85% accuracy across six Bangla entity categories and robust classification across 24 cybersecurity entity categories, enhancing text analysis and contextual understanding. [🔗 GitHub](#)

## Minutes of Meetings from Audio and Video [↗](#) | Whisper, LLM

- Designed an audio-visual transcription system leveraging Whisper and LLM models to generate clear, actionable minutes of meetings. Ensured alignment and accountability by capturing key decisions and action plans in an engaging, accessible format. [🔗 GitLab](#)

## Multi-label Bengali Text Classification using Transformers [↗](#) | Llama3, BERT

- Engineered a multi-label text classification system for Bengali e-commerce feedback using Transformers (Llama3, BERT). Achieved 93.19% test accuracy across six labels, demonstrating strong performance through precision and recall metrics, enhancing sentiment analysis and customer insights. [🔗 GitHub](#)

## CERTIFICATIONS

- Generative AI with Large Language Models - Coursera
- Convolutional Neural Networks with TensorFlow in Python - Coursera
- Custom and Distributed Training with TensorFlow - Coursera

## SOFT SKILLS

- Communication • Problem Solving

## REFERENCE

**Md. Alamgir Hossain, Phd**

Professor and Chairman

Dept. of Information and Communication Technology, IU

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