Md Bikasuzzaman

Bangladesh

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EDUCATION

Islamic University, Bangladesh **Jan 2018 – Jun 2023**
Bachelor of Engineering in Information and Communication Technology ***CGPA** - **3.45** out of **4.00***

Course - Artificial Intelligence and Machine Learning, Digital Image Processing, Calculus & Differential Equation, Geometry & Vector Analysis, Statistics for Communication Engineering, Information Theory

RESEARCH

- **M. Bikasuzzaman**, A. Arman, I. Hossen, AK. Biswas, A. Sabari, **"Hybrid Deep Learning and Machine Learning Approach for Early Guava Disease Detection & Classification"**. **Published** at the **IEEE QPAIN 2025**

- MS. Islam, M. Farjana, MM. Pias, **M. Bikasuzzaman**, MJ. Hossain, SMA. Rahim, **"TinyViT-HAR: Human Activity Recognition via WiFi CSI Signals by Lightweight Vision Transformers"**. **Accepted** at the **IEEE RAAICON 2025**

- **M. Bikasuzzaman**, A. Arman, N. Nowshin, **"Semantic Dissection of Bengali Feedback: Benchmarking Hybrid Deep Neural Networks for Multilabel E-Commerce Classification"**. Under Review

- **M. Bikasuzzaman**, AP. Polok, B. Saha, **"A Transformer-Based Approach for Summarizing Employee Logs"**. Under review

EXPERIENCE

AI Programmer Vision **Feb 2025 - Present**
Sysnova Information Systems Limited *Dhaka, Bangladesh*

- Driving innovation in computer vision by developing sophisticated solutions for image and video analysis. Leveraging the latest advancements in deep learning, object detection, and scene understanding, while also exploring the potential of Agentic AI to automate complex workflows and enable intelligent decision-making.

Machine Learning Engineer **Nov 2023 - Feb 2025**
Business Automation Ltd. *Rajshahi, 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 **July 2023 - Oct 2023**
Deshlink Limited *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 **Jan 2019 - Feb 2023**
ICE Innovation Lab *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, Agentic AI
Languages & Frameworks: Python, Matlab, C, C++, SQL, Flask, FastAPI
Library: Tensorflow, Scikit-learn, Pytorch, Transformers, Langchain, LangGraph, OpenCV, Pandas, Nltk
Generative AI: MCP, n8n, Prompt Engineering, LLM, RAG, Florence 2, Llama 3.2, OpenAI, Gemini, Ollama, Azure OpenAI, Groq, Open-WebUI, Vector Database (Pinecone, CromaDB, Qdrant, Faiss, Neo4j)
MLOps: AWS, MLflow, Comet ML, Linux, Git, Github Actions, CI/CD, Docker, Jenkins, Kubernetes, ArgoCD, Terraform, Ansible, Helm, Nginx, Prometheus, Grafana, XAI

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**

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**

Explainable AI(XAI): Visualizing Model Predictions with SHAP and LIME | XAI

- Explainable AI, applies SHAP and LIME to reveal how models make predictions on tabular, text, and image data. By visualizing influential features and patterns, it enhances model transparency and supports better understanding and debugging. **GitHub**

Multi-Agent AI for Cognitive Financial Intelligence | Agentic AI, LLM, LangGraph

- Leveraging LangGraph and LLMs to create an intelligent agent for financial data matching. This system automates the end-to-end reconciliation of bank statements with complex ERP entries. **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**

Brain Tumor classification Using CNN in MRI Imaging | CNN, Medical Imaging

- CNN-based deep learning model to classify brain MRI images and detect tumors. By training on tumor and non-tumor scans, the system achieves reliable prediction performance. It demonstrates how AI can support early and accurate medical diagnosis. **GitHub**

Enhancing Image Generation with Deep Convolutional GANs | DCGAN, DL

- Developed an image augmentation model using Deep Convolutional Generative Adversarial Networks (DCGAN). The project involved several key steps: preprocessing the data, constructing and training both the generator and discriminator models, and visualizing the generated images to monitor progress. **GitHub**

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**

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**

ACHIEVEMENTS

Position: Top 2% (Team: Tensor Titans, Within Top 10 out of 378) **2025**
Vivasoft AI Hackathon ***Vivasoft Limited***

Position: Top 50% (49th out of 98) **2024**
DL Enigma 1.0 - SUST CSE Carnival ***SUST***

Position: Top 45% (171st out of 384) **2022**
Robi Datathon 2.0: Pre-Assessment ***Robi Axiata Limited***

CERTIFICATIONS

- Generative AI with Large Language Models - Coursera
- Introduction to Deep Learning & Neural Networks with Keras - Coursera
- Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning - Coursera
- Custom Models, Layers, and Loss Functions with TensorFlow - Coursera
- Convolutional Neural Networks with TensorFlow in Python - Coursera
- Deep Learning: Recurrent Neural Networks with Python - Udemy
- Mathematics for Machine Learning: Multivariate Calculus - Coursera
- Neural Networks and Deep Learning - Coursera
- Custom and Distributed Training with TensorFlow - Coursera

REFERENCES

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