

# Ahmed Anwar

+8801757789212 - Portfolio - [ahmedanwar.aa872@gmail.com](mailto:ahmedanwar.aa872@gmail.com) - [linkedin](#) - [github](#) - Uttara, Dhaka 1230

## TECHNICAL SKILLS

---

**Programming Languages:** Python, JavaScript

**Libraries and Tools:** PyTorch, Tensorflow, Keras, Sklearn, Pandas, Matplotlib, Numpy, Selenium, Scrapy, Git

**AI Expertise:** Large Language Models (GPT, LLaMA, Mistral, Deepseek, etc.), Transformers, Vision Models (CNNs, ViT, DINOv2, etc.), Speech Technologies (STT/TTS), PEFT (LoRA, QLoRA), RAG, Vector Search, Semantic Search, Agentic Systems, Prompt Engineering, Fine-tuning & Custom Model, LangChain, LangGraph, CrewAI

**Databases:** MySQL, PostgreSQL, MongoDB (incl. Vector Search)

**Vector Databases:** Pinecone, FAISS, ChromaDB

**Web Development:** Django, Django REST Framework, FastAPI, HTML, CSS, Bootstrap, Jinja2

**DevOps & System Tools:** Docker, Nginx, GitHub Actions (CI/CD), Apache Airflow, SQLAlchemy, Gunicorn

## EDUCATION

---

**BRAC University**

*BSc in Computer Science and Engineering [CGPA-3.81]*

Dhaka, Bangladesh

July 2020 - February 2024

**Rajuk Uttara Model College**

*Higher Secondary Certificate [GPA-5.00]*

Dhaka, Bangladesh

July 2017 - June 2019

## WORK EXPERIENCE

---

**AI Engineer**

*Spectrum IT Solutions Limited*

August 2024 – Present

- **E-KYC Plug-and-Play Solution ([ekyc.nagorikcard.com](http://ekyc.nagorikcard.com)):** Developed a comprehensive E-KYC platform for institutional use. Engineered and integrated modules for robust NID OCR, automated NID verification, face liveness detection, and highly accurate face matching to streamline user onboarding. [Website](#)
- **Pensioner Verification System ([pension.nagorikcard.com](http://pension.nagorikcard.com)):** Built an automated verification system utilizing face liveness detection and matching to periodically verify the life status of TCB pensioners, ensuring secure and accurate pension distribution. [Website](#)
- **ID Document Liveness Detection System:** Developed a custom vision model capable of classifying multiple spoof types including genuine, photocopy, screen replay, reprint/critical spoof, half card, and blurry images of TCB Smart Family Cards issued by Government. This enhanced security measures for ID verification workflows. [Website](#)
- **High-Performance ML Inference:** Optimized Vision Transformer models for production, achieving sub-150ms latency on CPU-only environments. Scaled system throughput to 20+ requests per second (RPS) by implementing multi-threading, Nginx load balancing, and efficient model selection.
- **Bengali News Insight Engine:** Designed a full-scale data pipeline using Apache Airflow to scrape 40+ Bengali newspapers daily. Applied NLP and vector search techniques to extract and retrieve relevant insights using semantic similarity search.
- **Bengali STT & TTS Models:** Achieved notable progress in building a custom speech-to-text (STT) model for the Bengali language, enhancing language accessibility and enabling voice-powered interfaces; currently refining STT performance before initiating the text-to-speech (TTS) phase of the project.
- **Agentic Automation Systems:** Developed AI agent-based systems capable of automating workflows such as chat-driven information retrieval, report generation, and dynamic system updates—reducing manual overhead and improving operational efficiency.
- **Model Fine-Tuning & Optimization:** Fine-tuned large language models using Parameter-Efficient Fine-Tuning (PEFT) strategies to adapt them to specialized business domains with minimal resource consumption.
- **AI Infrastructure on AWS:** Managed full ML model lifecycle using AWS SageMaker and Bedrock for training, deployment, and auto-scaling across production workloads. Ensured system robustness and reliability through cloud-native monitoring and optimization.
- **Semantic Vector Search Systems:** Designed and deployed vector search pipelines using state-of-the-art embedding models and vector databases to enable semantic retrieval, chatbot memory, and content-based recommendation across multilingual data.
- **Backend Engineering & DevOps:** Built scalable backends primarily with Django and occasionally FastAPI. Set up Nginx for load balancing, implemented CI/CD pipelines, containerized applications with Docker, and monitored live deployments to ensure system reliability and performance.

## Python Intern → Junior Programmer

Genuine Technology & Research Ltd.

March 2024 – July 2024

- Promoted from Python Intern to Junior Programmer based on performance and key contributions to AI agent development and workflow automation systems.
- Designed and refined advanced AI Agent architectures for task automation and real-time decision-making. Built the **OwnAgent** system that learns and replicates user workflows using LLMs and automation primitives.
- Worked on Retrieval-Augmented Generation (RAG) pipelines using LLMs for domain-specific information retrieval. Delivered an AI system trained with Llama2 to answer queries via context-based retrieval.
- Built and deployed practical Python solutions using FastAPI. Developed a **LinkedIn Automation System** to automate login, engagement, and content analysis workflows.
- Collaborated in code reviews and team engineering sprints, maintaining high code quality and fast iteration cycles.

## Student Tutor

BRAC University, Dhaka, Bangladesh

October 2022 - December 2023

- Tutored Python, OOP, Data Structures, and algorithms at BRAC University.
- Provided individualized guidance, fostering a supportive learning environment.
- Developed time management, teaching and leadership skills.

## ABOUT MYSELF

---

As an AI engineer, I specialize in crafting AI-driven solutions that have a meaningful impact. My experience spans developing personalized chatbots to deploying large-scale models, blending technical expertise with creative problem-solving. From tutoring Python at BRAC University to driving AI innovations at Spectrum IT Solutions, I've nurtured a passion for cutting-edge technology. With a strong foundation in machine learning, generative AI, and web development, I'm committed to pushing the boundaries of what's possible and creating intelligent solutions that truly make a difference.

## PROJECTS

---

- **SynchroChat Website Engine (synchrochat.xyz)**: Architected a multi-tenant SaaS platform enabling instant deployment of AI-integrated business websites. Developed an Agentic Ecosystem where each site features an autonomous AI agent capable of managing live inventory, processing orders, and handling multi-lingual customer support. Integrated high-level state management to sync agent actions with backend finance and order-tracking modules. [Website](#)
- **AI Travel Support Agent**: Engineered an autonomous agent using **LangGraph** and **RAG** to manage the full customer lifecycle. Designed custom **agentic workflows** for multi-step task execution, including automated travel itinerary generation and stateful booking interactions, significantly reducing the need for human intervention. [Website](#)
- **Pharmacy Inventory Management System**, Built a robust inventory management system tailored specifically for pharmacies. Streamlines stock tracking, handles medical inventory workflows, and improves daily operational efficiency. [Website](#) | [GitHub](#)
- **Resource Sharing and Course Review Website**, Built a MERN stack website integrating AI-driven sentiment analysis for reviews, enabling resource sharing, blogging, and problem-solving. [GitHub](#)
- **Offensive Text Detection Model**, Designed offensive speech identification models using BiLSTM, SVC, and Logistic Regression, showcasing proficiency in NLP and machine learning. [GitHub](#)
- **Water Quality Detection Model**, Developed a Water Quality Detection Model employing SVM, Decision Tree, KNN, and Logistic Regression to predict water safety, demonstrating environmental ML applications. [GitHub](#)

## THESIS WORK

---

**Title: A Study on the Efficacy of Natural Language Generation**

- Designed a classification model to differentiate between Rabindranath Tagore's texts and non-Tagore texts.
- Analyzed stylistic and linguistic differences between Rabindranath-era texts and contemporary Bangla texts.
- Conducted multi-author text classification for Bangla literature.
- Fine-tuned mT5 and BanglaT5 models to generate texts in Rabindranath Tagore's writing style.
- Developed a classifier to distinguish between authentic Tagore texts and AI-generated imitations.

## CERTIFICATIONS

---

- **Generative AI with Large Language Models - DeepLearning.AI, Amazon Web Services**  
*Issued May 2024 — [Credential ID YHGQPC4GTDMG](#)*
- **End to End LLMs with Azure - Duke University**  
*Issued Jan 2025 — [Credential ID 31HXGKL0YOGC](#)*
- **Neural Networks and Deep Learning - DeepLearning.AI**  
*Issued Apr 2023 — [Credential ID DYK78KKDML8X](#)*

## ACHIEVEMENTS

---

- **The Duke of Edinburgh's Award [Gold Awardee]**  
*Issued Dec 2018*
- **Merit Scholarship Award, BRAC University**  
*Awarded for maintaining high CGPA*
- **VC's List and Dean's List Award, BRAC University**  
*As recognition of achieving outstanding academic performance*

## REFERENCES

---

- **Dr. Farig Yousuf Sadeque**  
Assistant Professor, Department of Computer Science and Engineering, BRAC University
- **Dr. Md. Khalilur Rahman**  
Associate Professor, Department of Computer Science and Engineering, BRAC University