

QUAZI ADIBUR RAHMAN ADIB

AI Governance & Systems Engineer (Gov/Regulatory) | Machine Learning Engineer | Agentic LLM Systems (RAG, Evals, MLOps)

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SUMMARY

Machine Learning Engineer with around 4 years of experience designing and deploying large-scale AI systems. Deep expertise in LLMs, Transformer architectures, RAG pipelines, and AI agents, with strong proficiency in Python, PyTorch, HuggingFace, and MLOps. Proven track record in multilingual and low-resource NLP, model fine-tuning and optimization (LoRA, quantization), and building scalable, production-grade ML platforms. Experienced in system-level AI strategy and cross-functional collaboration to ensure reliability, interoperability, and deployment at scale.

TECHNICAL SKILLS

Programming: Python, C++, C
LLMs/NLP: Transformers, RAG, LLM Agents, spaCy
Backend: FastAPI, Flask, REST, WebSockets
MLOps/Cloud: Docker, Kubernetes, Azure, GCP
Serving: Triton Inference Server, TensorRT-LLM, Multi-GPU
ML/DL: PyTorch, TensorFlow, Keras, scikit-learn, Hugging Face
Speech: Audio Denoising, ASR
Data: NumPy, Pandas, SQL
Model Optimization: LoRA/PEFT, Quantization, Inference

EXPERIENCE

EBLICT-Dream71

Machine Learning Engineer

EBLICT Project, Bangladesh Computer Council, Government of Bangladesh

April 2025 - Present

- Designed and developed **Large Language Model (LLM)**-based multilingual Neural Machine Translation systems with a primary focus on Bangla.
- Fine-tuned Transformer models on domain-specific corpora, including **government, legal, healthcare, and conversational datasets**.
- Built production-grade LLM agents with tool usage, memory, and reasoning capabilities using **LangChain**.
- Applied parameter-efficient fine-tuning techniques such as **LoRA and preference-based optimization (DPO)**.
- Optimized inference latency and serving cost using **LoRA, INT8 quantization, batching, and structured pruning**.
- Deployed and served LLMs using **TensorRT-LLM and NVIDIA Triton Inference Server** for high-throughput, low-latency inference.
- Trained and fine-tuned large models in **multi-GPU environments** using data and model parallelism (e.g., DDP/FSDP), ensuring efficient resource utilization and scalability.
- Designed dataset preprocessing, annotation pipelines, and systematic model evaluation.
- Collaborated with cross-functional teams to **deploy, monitor, and maintain** scalable ML services in production.

Ministry of Posts, Telecommunications and Information Technology

AI Governance & Systems Engineer

Office of the Honorable Special Assistant, Government of Bangladesh

April 2025 - Feb 2026

- Provided continuous technical support to the **Honorable Special Assistant to the Chief Advisor** while leading government-side coordination, drafting, and formalization of the **National AI Policy (2026-2030)** and **National Source Code Policy**.
- Supported technical assessment of the **National Data Governance Authority Ordinance 2025 (NDGA)** and **Personal Data Protection Ordinance 2025 (PDPO)**, ensuring alignment between regulatory requirements and AI deployment constraints.
- Conducted technical restructuring of the RDPP for the **Bridging AI with National Services (BrAIns)** Project, evaluating model pipelines, data workflows, compute infrastructure, and system integration for sovereign LLM development.
- Facilitated the **Directorate Of Posts** in digitizing large-scale legacy manuals dating back to the British period, enabling AI-ready structured digital archiving, intelligent search, and long-term preservation.

Bengali.AI

Research Engineer (AI/ML)

Remote

June 2022 - Present

- Developed **Unicode normalization and grapheme parsing** tools for **8 Indic languages**.
- Achieved **4x faster** grapheme parsing through **optimized algorithm design**.
- Contributed to **open-source NLP tools** used by **researchers and practitioners**.

Synesis IT PLC

Trainee AI Engineer

Dhaka, Bangladesh

July 2024 - April 2025

- Built **production-ready multilingual RAG-based chatbot and voice-bot systems** using **LLM APIs**.
- Developed a **speech denoising model**, improving **audio clarity by $\approx 70\%$** on **Convay.com**.
- Implemented **real-time speech language identification** for **live captioning**.
- Built **LLM-powered AI agents** enabling **reasoning, tool usage, and context persistence**.
- Implemented **vector-based retrieval pipelines** using **embeddings** for **contextual response generation**.

PUBLICATION

* Equal Contribution; † Supervisor

- Unicode Normalization and Grapheme Parsing of Indic Languages.**
 - Authors: ***QAR Adib**, *N Ansary, T Reasat, AS Sushmit, S Mehnaz, K Fatema, †MMO Rashid, †F Sadeque.
 - Published at LREC-COLING 2024 - The 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation.
Link: <https://aclanthology.org/2024.lrec-main.1479/>
 - Developed an efficient Grapheme Parsing algorithm to parse grapheme from indic parser. Also, we have developed an indic text normalizer that normalized 8 different normalization issues involved in large-corpus.

- **A Deep Hybrid Learning Approach to Detect Bangla Fake News.**
 - Authors: **QAR Adib**, MHK Mehedi, MS Sakib, KK Patwary, MS Hossain, †AA Rasel.
 - Published at 5th IEEE ISMSIT 2021 on 21-23 Oct. 2021. DOI: [10.1109/ISMSIT52890.2021.9604712](https://doi.org/10.1109/ISMSIT52890.2021.9604712)
 - Developed a binary classifier that can detect Bangla Fake News. This classifier hybridizes both classical machine learning algorithms and deep learning algorithms.
- **Prediction Model for Mortality Analysis of Pregnant Women Affected With COVID-19.**
 - Authors: **QAR Adib**, ST Tasmii, M Bhuiyan, M Raihan, †AB Shams.
 - Published at 24th IEEE ICCIT 2021 on 18-20 Dec. 2021. DOI: [10.1109/ICCIT54785.2021.9689824](https://doi.org/10.1109/ICCIT54785.2021.9689824)
 - Analyze the mortality rate of COVID-19-affected pregnant women and develop classical machine learning algorithms to predict the likelihood of COVID-19-affected pregnant women's mortality.

LEGISLATIVE & POLICY PUBLICATION

- **National AI Policy of Bangladesh (2026-2030)**
 - Provided system-oriented technical reviews and standards analysis for the National AI Policy of Bangladesh (2026–2030), contributing technical inputs to drafting and ensuring feasibility, interoperability, and alignment with national digital infrastructure.
- **National Data Governance Authority Ordinance, 2025**
 - Ordinance No: 60, 2025. Gazette Link: [NDGA, 2025](#)
 - Contributed to the technical assessment of the National Data Governance Authority Ordinance 2025 (NDGA) to support the establishment of an authority for data governance and interoperability, while aligning its provisions with the engineering requirements of AI ecosystem development.
- **Personal Data Protection Ordinance, 2025**
 - Ordinance No: 61, 2025. Gazette Link: [PDPO, 2025](#)
 - Supported the technical review of the Personal Data Protection Ordinance 2025 (PDPO), which is designed to safeguard personal data and enhance citizens' privacy rights, while aligning its requirements with practical considerations for AI ecosystem development.

EDUCATION

BRAC University, Bangladesh

B.Sc. in Computer Science

Jan 2020 - May 2024

CGPA: 3.85 / 4.00

PROJECTS

- **Unified NLP Annotation Toolkit:** Built a Flask-based annotation platform supporting classification, NER, QA generation, and coreference resolution.
- **Image Deraining GAN:** Designed a multi-level GAN model for rain removal from images.
- **Offensive Language Detection:** Developed ML models using n-gram features for social media moderation.
- **Real-Time Object Detection:** Implemented TensorFlow.js-based object detection using webcam input.
- **Clinical QA Chatbot:** Developed an NLP-based chatbot leveraging HuggingFace models.

HONOUR AND AWARDS

- Graduated with **Highest Distinction** from Brac University | 2024
- Honorable mention in the **DEAN's** list **three** times and **VC's** list **three** times for academic excellence | 2020-2024
- **Merit Scholarship** Based on Bracu Academic Results in five times during undergraduate studies | 2020-2024
- **Champion** at BRACU Quarantine Contest for First-Year Students | 2020
- **Champion** at BRACU Programming Skills Bootcamp Final Contest | 2020

CERTIFICATION

- Certificate for Participants - LREC-COLING 2024 - The 2024 Joint International Conference on Computational Linguistics, Language Resources and Evaluation | 2024
- Certificate for Participants - Hands-on Deep Learning Coding & Code Management | 2024
- Certificate for Presentation of Research Paper - "A Deep Hybrid Learning Approach to Detect Bangla Fake News." in the 5th International Symposium on Multidisciplinary Studies and Innovative Technologies | 2021
- Certificate for Presentation of Research Paper - "Prediction Model for Mortality Analysis of Pregnant Women Affected With COVID-19." in the 24th International Conference on Computer and Information Technology | 2021

REFERENCE

Dr. Farig Yousuf Sadeque

Associate Professor, Brac University

Department of Computer Science and Engineering BRAC University, Dhaka

E-mail: farig.sadeque@bracu.ac.bd

Mohammad Mamun Or Rashid

Senior Consultant, Bangladesh Computer Council

'Enhancement of Bangla Language in ICT through R&D' Project ICT Division, Ministry of Posts, Telecommunications and Information Technology

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