MD FAISAL AHMED

Computer Science & Engineering • Applied NLP & Machine Learning Researcher

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RESEARCH INTERESTS

Natural Language Processing (NLP), Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), Autonomous Agent Systems, Transformer Optimization & Quantization (ONNX), Low-Resource Linguistic Modeling, and High-Throughput Distributed Backends.

EDUCATION

Bachelor of Science in Computer Science & Engineering — *North South University (NSU)* **Dhaka, Bangladesh | Graduated 2022**

Result: First Class Honours (CGPA: 3.08 / 4.00, ~85% aggregate score). **Key Coursework:** Machine Learning & AI, Applied NLP, Data Structures & Algorithms, Database Systems, Software Engineering, Linear Algebra & Statistics.

Higher Secondary Certificate (HSC) – Science — *Government Science College* **Dhaka, Bangladesh | 2017**

Result: GPA 4.92 / 5.00 (First Division, Physical Sciences & Mathematics).

PEER-REVIEWED PUBLICATIONS

1. **Ahmed, M. F.**, et al. (2023). *"Bangla Hate Speech Detection Using Transformer-Based NLP & Deep Learning."* **Proceedings of the 2023 3rd Asian Conference on Innovation in Technology (ASIANCON)**. **IEEE Xplore**, pp. 1–6. **[IEEE]** — Investigated fine-tuned BERT and GRU sequence architectures, achieving 98.87% benchmark classification accuracy across low-resource dialect boundaries with ethical preprocessing pipelines.
2. Husain, S. M., **Faisal, M.**, & Hasan, K. (2024). *"Project Schedule Delays and Circular Effects of Socio-Economic and Environmental Impacts: A Case of Bangladeshi Mega Projects."* **International Journal of Management and Applied Science (IJMAS)**, Vol. 10(4), pp. 22–40. **[Indexed]** — Conducted mixed-methods empirical analysis integrating sentiment analysis over public impact records with quantitative project risk modeling.

RESEARCH & ACADEMIC APPOINTMENTS

Research Assistant (Applied NLP & Deep Learning) — *North South University* **Jan 2024 – Jul 2024**

- Architected and benchmarked deep sequence models combining attention heads, GRU networks, and multilingual BERT tokenizers for morphologically rich textual corpora.
- Engineered automated data extraction, token cleaning, stopword filtering, and synthetic data augmentation workflows for under-resourced dialect modeling; conducted ablation studies for IEEE papers.

SELECTED RESEARCH & TECHNICAL ARTIFACTS

Multi-Agent RAG & Autonomous Reasoning Pipelines **PyTorch, LangGraph, Qdrant**

Constructed self-reflective query decomposition agents with vector-store retrieval, testing temporal decay re-ranking and reducing factual hallucination on multi-hop QA benchmarks.

Multi-Label Transformer Classifier & ONNX Inference Engine **DistilRoBERTa, ONNX Runtime**

Trained multi-label classification over 92,000+ textual records; profiled inference acceleration using FP16 dynamic quantization to achieve sub-15ms edge inference.

PROFESSIONAL ENGINEERING EXPERIENCE

Software Engineer (L1) / Backend Architect — *TripFindy* **Dhaka, Bangladesh | Aug 2026 – Present**

- Architect scalable microservices in Node.js, NestJS, and TypeScript; engineered NDC and GDS (Sabre, Amadeus) API synchronizations for real-time global booking systems.
- Optimized relational database schemas (MySQL, PostgreSQL) using indexing and connection caching, reducing query latency across high-concurrency transactional flows.

Junior Software Engineer (Cloud Infrastructure) — *Inception Games* **Remote / Dhaka | Apr 2026 – Aug 2026**

- Deployed RESTful backend services on Google Cloud Platform (Cloud SQL, App Engine, Cloud Build CI/CD); implemented automated testing and system monitoring.

Junior Back-End Engineer — *Fly Far Tech* **Dhaka, Bangladesh | Jan 2023 – Jan 2025**

- Built high-throughput backend APIs; enforced robust JWT authentication, Role-Based Access Control (RBAC), and integrated multi-channel transactional payment gateways.

TECHNICAL SKILLS & METHODOLOGIES

Programming Languages:	Python, TypeScript, JavaScript (ES6+), C++, SQL, Bash
AI & Machine Learning:	PyTorch, Hugging Face Transformers, ONNX Runtime, fastai, LangGraph, Scikit-Learn, Vector Embeddings
Systems & Databases:	Node.js, NestJS, Express.js, PostgreSQL (pgvector), MySQL, Redis, RESTful Microservices
Cloud & DevOps:	Docker, Google Cloud Platform (GCP), Git/GitHub, CI/CD, Linux Server Administration

LEADERSHIP, SERVICE & LANGUAGES

Leadership & Community: Sub-Executive Member, North South University Social Services Club (organized flood relief operations, medical camps, and blood donation drives); Former Cadet, Bangladesh National Cadet Corps (BNCC).

Languages: English (Professional Working Proficiency, IELTS Overall Band: 7.0), Bengali (Native).