

Md Omar Faruqe Riyad

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EDUCATION

Shahjalal University of Science and Technology (SUST)

Sylhet, Bangladesh

B.Sc. in Computer Science and Engineering; CGPA: 3.53/4.00 (Last two years: 3.83)

2018 – 2023

EXPERIENCE

Altri.ai 🔗

Remote, US

AI Engineer

Oct. 2025 – Present

- Architected a hybrid AI scoring engine combining **LLM-based feature extraction** from unstructured property descriptions with traditional ML models for price prediction and investment recommendations.
- Refactored data enrichment pipeline using **Python asyncio**, achieving a **10x throughput increase** and reducing cloud compute costs by parallelizing I/O-bound LLM operations.
- Built a fault-tolerant ingestion engine using HomeHarvest and **PostgreSQL**, implementing a “Delta Sync” strategy with immutable event logging to track property lifecycles without data loss.
- Established a containerized training pipeline with Human-in-the-Loop validation gates, ensuring new “Challenger” models outperform production “Champions” before deployment.
- Developed a FastAPI backend and React frontend backed by Supabase. Implemented robust security via Row Level Security (RLS) and distributed job locking for safe, multi-tenant concurrency.
- Dockerized the complete microservices stack (API, Scheduler, Trainer) for reproducible deployments across local environments and Render cloud infrastructure.

Dynamic Solution Innovators 🔗

April 2023 – Present

Software Engineer

Dhaka, Bangladesh

- Engineered security-critical government applications for NBR, MoCAT, and BCIC, transforming complex offline bureaucracies into automated digital workflows using **Java EE (JSF, EJB, JPA)**.
- Optimized team-wide development speed by resolving a critical GlassFish hot-swap failure, slashing redeployment latency by **96% (2m → 5s)**.
- Designed an event-driven architecture using **JMS** to decouple services, ensuring high availability and fault tolerance for the E-Appeal system.
- Engineered a centralized monitoring stack (**Prometheus, Loki, Grafana**) and dockerized the full application stack for consistent local development.
- Contributed to the design of a **state-driven approval workflow** for the Smart Hotel Management System (SHMS), reusable across multiple application types.
- Led end-to-end delivery of the **Procurement and Inventory module** for BCIC-ERP, from business analysis (As-Is/To-Be modeling) and database schema design to production deployment.
- Conducted vulnerability assessments and security audits as a key member of the internal cybersecurity team.

PROJECTS

KnowledgeRelay 🔗 | *Python, FastAPI, LangChain, ChromaDB, React*

2025

- Built a RAG system to preserve project-specific knowledge bases and assist team members via contextual Q&A.
- Engineered a multi-stage knowledge ingestion pipeline that automatically generates QA pairs from documents.
- Integrated **ChromaDB** with vector embeddings and metadata-based filtering for efficient retrieval.
- Implemented contextual query rephrasing using chat history for higher accuracy.

PrimeFaces Open Source Contribution 🔗 | *Java, JSF, PrimeFaces*

2024

- Contributed to the **PrimeFaces** library (PR #12865) by injecting custom **FilterMeta** into **JPALazyDataModel**.
- Enabled developers to perform advanced, customizable filtering within DataTables.

Shopaholic 🔗 | *JavaScript, Node.js, Express.js, MongoDB, React, Redux*

2022

- Built a full-stack e-commerce platform connecting customers, banks, and suppliers.

Brevity 🔗 | *Python, Flask, MySQL, JavaScript*

2021

- Developed a knowledge-sharing platform connecting beginners with experts in various fields.

RESEARCH & PUBLICATIONS

AdversaryAI at BLP-2025 Task 2 🔗	BLP 2025, IJCNLP-AAACL
<ul style="list-style-type: none">• Low-Resource Adaptation: Investigated low-resource language code generation by fine-tuning open-source models (Llama 3, TigerLLM, Qwen) using parameter-efficient LoRA adapters.• Reasoning Enhancement: Enhanced model reasoning via Chain-of-Thought (CoT) and a self-refinement loop that iteratively critiques and corrects generated code based on execution feedback.• Error Analysis: Conducted rigorous error analysis to identify failure modes, achieving 85% accuracy and 4th Place out of 32 teams.	
Deja Vu at SemEval 2024 Task 9 🔗	SemEval 2024, NAACL
<ul style="list-style-type: none">• Designed data augmentation pipelines to improve model robustness for common sense reasoning tasks.• Conducted a comparative study of Advanced Language Models, analyzing performance gaps in lateral thinking puzzles.	
Team_Syrax at BLP-2023 Task 1 🔗	BLP 2023, EMNLP
<ul style="list-style-type: none">• Semi-Supervised Learning: Applied self-training techniques and back-translation to mitigate data scarcity and class imbalance in Bangla text.• Ensemble Strategy: Implemented bagging and majority voting ensembles for Violence Inciting Text Detection, achieving Top 20 rank.	
Visual Question Answering (VQA) Data Synthesis <i>Undergraduate Thesis</i>	2022
<ul style="list-style-type: none">• Addressed "Answer Space Diversity" limitation in VQA v2 by augmenting training data with automatically generated, contextually relevant QA pairs.• Conducted a comprehensive study of VQA methods to analyze limitations in visual reasoning.	

HONORS, AWARDS & CERTIFICATIONS

4th Place out of 32 teams – Code Generation in Bangla Shared Task, IJCNLP-AAACL 2025	[Leaderboard]
6th Place out of 30 teams – DSI AI Agent Hackathon, 2025	[Leaderboard]
Top 20 (Rank 12 post-eval) – Violence Inciting Text Detection (VITD), BLP 2023	[Leaderboard]
Ranked 11th – BUET CSE Fest 2022 AI Contest	
Certified in Cybersecurity (CC) – ISC2	[Badge]
Solved 500+ algorithmic problems on Codeforces, LeetCode, and LightOJ.	

LEADERSHIP & TEACHING

Course Instructor	2024 – Present
<i>Dynamic Learning</i>	<i>Remote</i>
<ul style="list-style-type: none">• Authored and instructed Enterprise Web Development with JEE, JSF, and PrimeFaces course, teaching core architectural patterns including component-driven design, CDI/EJB integration, and JSF lifecycle management. 📺	
Volunteer	2019
<ul style="list-style-type: none">• Served as volunteer at IEEE International Conference on Bangla Speech and Language Processing (ICBSLP).	

TECHNICAL SKILLS

Languages: Java, Python, C/C++, SQL, JavaScript, Shell	
Backend & Systems: FastAPI, Flask, Java EE (JSF, JPA, CDI, EJB), GlassFish, JMS	
Frontend: React, PrimeFaces	
AI & Data Engineering: PyTorch, LangChain, Hugging Face, RAG, ChromaDB, OpenAI API, XGBoost	
Database & Cloud: PostgreSQL, MySQL, Neo4j, Supabase, Docker, GitHub Actions, MinIO	
Tools & Observability: Prometheus, Grafana, Loki, Git, Linux, Flyway, JasperReports, \LaTeX	