

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

Dynamic Solution Innovators 🔗

April 2023 – Present

Software Engineer

Dhaka, Bangladesh

- Built and open-sourced [gf](#) 🔗, a GlassFish development CLI that **hot-swaps bytecode** into running JVMs via JDI/JDWP and bypasses JasperReports classloader caching, reducing local edit-deploy cycles from **~2 minutes to ~5 seconds**.
- Built the **foundational architecture** for DSI's first large-scale Jakarta EE system (E-Appeal for NBR), defining the security model, package structure, and CDI/EJB conventions later reused across subsequent JEE projects.
- Re-architected file storage and delivery behind a pluggable **StorageClient** abstraction supporting MinIO and filesystem backends, replacing base64-inlined file rendering with URL-based streaming to eliminate large HTML payloads and reduce server-side memory pressure. Added scoped file authorization and **nginx X-Accel-Redirect** offloading for efficient file serving.
- Designed a reusable **approval-workflow engine** backed by configurable state transitions, replacing hardcoded per-module approval logic. Engineered a **dynamic field-level correction system** enabling reviewers to reopen only selected form fields with inline feedback while preserving audit history.
- Centralized **RBAC enforcement** in the E-Appeal system by replacing authorization checks scattered across JSF views and services with a unified permission-evaluation layer.
- Designed a **JMS**-based notification pipeline with DLQ-backed retries, isolating SMS/email failures from the synchronous request path.
- Led development of the **Procurement, Inventory, Asset, and Budget** modules of BCIC-ERP, including process modeling, schema design, backend implementation, and production rollout.
- Performed application security reviews and **static/dynamic testing against OWASP Top 10** risks as part of the internal Cybersecurity Team, catching access-control, injection, and validation flaws before production release.

Altri.ai 🔗

Part-time

Full-Stack AI Engineer, RevestAI 🔗

Remote, US

- Rebuilt the LLM enrichment pipeline around **asyncio.gather** with bounded concurrency and atomic batch commits, allowing failed batches to resume without reprocessing completed LLM calls and improving throughput by **~10×** over the prior sequential pipeline.
- Designed the **three-stage property scoring pipeline** separating LLM feature extraction, valuation models, and deterministic financial heuristics, enabling each layer to be independently retrained and tested.
- Built the property ingestion pipeline on HomeHarvest and **PostgreSQL** using content-hash deduplication and incremental delta-syncing, preventing duplicate enrichment runs while preserving historical listing state across repeated scrapes.
- Implemented **distributed job coordination on PostgreSQL** using **SELECT FOR UPDATE** row-level locks with automatic stale-lock recovery, allowing multiple scheduler replicas to safely process long-running enrichment and training jobs.
- Built the ML training and promotion pipeline for **XGBoost**-based property valuation using Champion/Challenger validation and curated holdout datasets to prevent unverified models from triggering production-wide rescoring.

PROJECTS

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

2025

- Built a RAG-based knowledge transfer system during a 24-hour onsite hackathon, achieving **6th place** in the DSI AI Agent Hackathon 2025.
- Engineered a multi-stage ingestion pipeline that generates structured QA pairs from documents and supports context-aware conversational retrieval.

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

2024

- Contributed a feature enhancement to PrimeFaces' **JPALazyDataModel**, enabling advanced custom filtering for DataTable-backed JPA queries.

RESEARCH & PUBLICATIONS

AdversaryAI at BLP-2025 Task 2 🔗	BLP 2025, IJCNLP-AAACL
Improved low-resource Bangla code generation through LoRA fine-tuning, self-refinement loops, and execution-guided correction, achieving 4th place out of 32 teams.	
Deja Vu at SemEval 2024 Task 9 🔗	SemEval 2024, NAACL
Improved robustness in commonsense reasoning by designing data augmentation strategies and evaluating performance gaps across modern language models on structured reasoning tasks.	
Team_Syrax at BLP-2023 Task 1 🔗	BLP 2023, EMNLP
Built semi-supervised learning pipeline using self-training, back-translation, and ensemble methods for Bangla text classification, achieving a Top 20 ranking.	
Visual Question Answering (VQA) Data Synthesis <i>Undergraduate Thesis</i>	2022
Improved VQA training data quality by generating diverse context-aware question-answer pairs, addressing limitations in answer space coverage.	

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>
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
Served as volunteer at IEEE International Conference on Bangla Speech and Language Processing (ICBSLP).	

TECHNICAL SKILLS

Languages: Java, Python, SQL, Bash, JavaScript, C/C++	
Backend & Systems: Jakarta EE (JSF, CDI, EJB, JPA, JMS), Spring Boot, FastAPI, GlassFish, AspectJ	
AI & ML Systems: PyTorch, LLMs, RAG, LangChain, ChromaDB, XGBoost, LoRA Fine-tuning, NLP	
Databases & Storage: PostgreSQL, MySQL, Neo4j, Supabase, MinIO, Hibernate/JPA, Flyway, Alembic	
Security: OWASP Top 10, RBAC, Jakarta Security, JWT	
Infrastructure & Observability: Docker, Git, GitHub Actions, Prometheus, Grafana, Loki, Nginx, Ansible, ZFS	
Frontend: PrimeFaces, React	