Rafsun Jany Arman

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Experience

Senior Software Engineer Nov. 2025 – Present
SELISE Group *Dhaka, Bangladesh (Hybrid)*

- Architected a secure, on-premise **Enterprise Generative AI Ecosystem** (Web, Mobile, Backend) using **LangGraph**, **Redis**, and **WebSockets**, optimizing resource utilization to reduce inference latency by ∼15% while enabling comprehensive real-time communication.
- Engineered a robust **RAG** pipeline utilizing **Qdrant** and **LangChain** to process complex file structures, delivering context-aware LLM responses with high precision based on private enterprise data.
- Orchestrated a **Multi-Agent System** integrating STT/TTS and specialized agents (via **Perplexica** and **SearXNG**) for real-time web search capabilities beyond static training data.
- Developed a high-concurrency **Collaborative Chat Engine** with secure link-sharing and dynamic participant management using **FastAPI** and **SignalR**, streamlining group problem-solving.

Software Engineer Nov. 2023 – Nov. 2025
SELISE Group *Dhaka, Bangladesh (Remote)*

- Developed the all-in-one **Ski World Cup App** using **Flutter** and **Bitmovin**, delivering sub-3s latency live streaming and real-time athlete telemetry for over 30k users.
- Built a dynamic **Maritime Data Visualization Dashboard** for a global marine services client, enabling predictive alerts and efficient data filtering across multiple operational systems.
- Engineered a scalable **IoT Middleware** using **Java Spring Boot**, **RabbitMQ**, and **TimescaleDB** to orchestrate millions of telemetry messages for Smart Metering and Industrial use cases.
- Designed end-to-end **Smart Metering Integration** solutions, automating data collection from diverse hardware protocols to optimize utility consumption analysis.

Junior Software Engineer Aug. 2022 – Oct. 2023
SELISE Group *Dhaka, Bangladesh (Hybrid)*

- Extended an **IoT Commodity Tracking Platform** for a leading mining company, ensuring accurate shipment monitoring and bag condition tracking across international ports.
- Created a **Production Cost Monitoring System** for a Swiss food manufacturer, utilizing IoT data to track electricity usage and streamline operational efficiency, resulting in reduced waste.
- Enabled **White-Label IoT Solutions** by developing customizable branding tools and rule chains, allowing B2B clients to tailor platforms to specific operational branding needs.

Intern Software Engineer Mar. 2022 – Jul. 2022
SELISE Group *Dhaka, Bangladesh (Remote)*

- Conducted R&D on **ThingsBoard IoT** platform features and designed custom D3.js data visualization graphs to meet specific client reporting requirements.
- Published an NPM package for file uploads in **NativeScript** (Android API ≥ 30) and identified security vulnerabilities in internal systems, earning recognition.

Research

Fish classification using saliency detection | *Computer Vision, U2-Net, HOG*

- Developed a fish classification system utilizing saliency detection (depending on shape and texture) and ensemble learning (KNN, SVM, etc.), achieving up to 100% accuracy on local fish datasets.

Fish Observatory and Census System (FOCS) | *Image Processing, Research*

- Proposed and implemented a census system for automated fish monitoring and population estimation using advanced image processing techniques.

Parkinson's Disease Classification | *Deep Learning, DenseNet121, InceptionV3*

- Built an image-based detection system using DenseNet121 and InceptionV3 to classify hand-drawn spirals/waves, achieving high accuracy (96.67%) in differentiating healthy vs. affected subjects.

Bangla & **Bus-Mama** | *NLP, Python, Mobile Dev*

- Created 'Bangla', a Python library for Bengali text processing and lemmatization using Trie data structures.
- Applied the library in 'Bus-Mama', a real-time tracking application with a Bengali-language chatbot for university students.

Projects

CrewsBoard | *Python, CrewAI, RAG, Multi-Agent*

- Engineered an AI agent task management microservice supporting multi-model architectures and multi-tenancy.
- Implemented a RAG knowledge base to enhance agent intelligence and context retrieval accuracy.

Adaptive Marketing AI | *AI/ML, Python, Marketing API*

- Built an intelligent marketing engine that interfaces with multiple platforms to generate and deploy targeted ad campaigns based on data-driven insights.

Canvas | *FastAPI, React, CrewAI*

- Developed a modern, modular interface for orchestrating AI agents, featuring value-based flow management and visualization.
- Designed a scalable architecture using FastAPI and SQLModel for efficient agent workflow handling.

Fire-Free | *IoT, Angular, Ionic, Node.js*

- Created a comprehensive fire safety solution combining hardware sensors (gas/GPS) with a mobile app for real-time alerts.
- Integrated Google Maps for victim location tracking and routing, aimed at improving firefighter response times.

Technical Skills

Languages: Python, Java, TypeScript, Dart, SQL
Frameworks: FastAPI, Spring Boot, React, Flutter (BLoC, Riverpod), CrewAI, LangChain
Databases & Cloud: PostgreSQL, TimescaleDB, MongoDB, Qdrant, Redis, Firestore, RabbitMQ
Developer Tools: Git, Docker, LangGraph, Perplexica, SearXNG, Bitmovin
Concepts: Generative AI, RAG, Microservices, IoT, Multi-Agent Systems, System Architecture, CI/CD

Honors & Awards

Language & Knowledge Engineering Lab | *8th Int. Symposium (LKE 2021)* 2021

Top 100 | *Idea Contest Mujib 100* 2021

Honorable Mention | *CanSat Competition (BRAC)* 2019

Trainer | *Mechatronics Club, GSTU* 2019

Education

Gopalganj Science and Technology University (GSTU) Gopalganj, Bangladesh
Bachelor of Science in Computer Science & Engineering; CGPA: 3.41 *Jan. 2017 – May 2022*