

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 SQLAlchemy 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