

# Rafsun Jany Arman

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## EXPERIENCE

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### 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  $\geq 30$ ) and identified security vulnerabilities in internal systems, earning recognition.

## RESEARCH

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### 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

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**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

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**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

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<b>Language &amp; Knowledge Engineering Lab</b>   <i>8th Int. Symposium (LKE 2021)</i>	2021
<b>Top 100</b>   <i>Idea Contest Mujib 100</i>	2021
<b>Honorable Mention</b>   <i>CanSat Competition (BRAC)</i>	2019
<b>Trainer</b>   <i>Mechatronics Club, GSTU</i>	2019

EDUCATION

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<b>Gopalganj Science and Technology University (GSTU)</b> <i>Bachelor of Science in Computer Science &amp; Engineering; CGPA: 3.41</i>	Gopalganj, Bangladesh <i>Jan. 2017 – May 2022</i>
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