

# Nayeem Islam

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## EXPERIENCE

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**Senior System Analyst** | *Synesis IT PLC, Dhaka, Bangladesh*

Jun 2024 – Present

### Big Meeting Solution

- Engineered a scalable full-stack web application to enable virtual meetings for 5000+ participants, utilizing technologies like *YouTube Data API*, *OwnCast*, *Spring Boot*, *Eureka*, *Hystrix*, *Spring Cloud Gateway*, *Kafka*, and *React*.
- Seamlessly fused the application with *Conway*, a video conferencing solution, enhancing user experience with interactive capabilities.
- Established a comprehensive CI/CD pipeline using *Jenkins*, *Maven*, *Docker*, *Harbor*, *SonarQube*, and *Prometheus-Grafana* for efficient deployment and monitoring.

### Voice/Text Chatbot

- Directed a technical team to create a machine learning-powered multilingual voice and text chatbot capable of answering user queries in Bangla and engaging them with relevant follow-up questions, leveraging *OpenAI Embedding*, *FAISS*, *BERT*, and *Multilingual E5* models.
- Optimized a Bangla *Wav2Vec2* ASR model and implemented a *FastAPI*-based pipeline to streamline model interactions.
- Connected the chatbot to an *Asterisk* server, enabling voice interaction through telephone systems.

**System Analyst** | *Synesis IT PLC, Dhaka, Bangladesh*

Apr 2022 – May 2024

### Transcription System for Conway

- Spearheaded the development of a multilingual transcription system for *Conway* meetings, achieving accurate transcription for over 200 hours of content through advanced speaker separation techniques.
- Enhanced transcription accuracy for Bangla by fine-tuning *Whisper medium* ASR models.
- Investigated and resolved challenges unique to online meeting environments, designing robust solutions to handle these scenarios effectively.
- Devised a *FastAPI* pipeline incorporating *VAD*, *denoisers*, and *LUFs* for both real-time and post-processing transcription workflows.
- Pioneered an offline transcription solution using *Whisper diarization*, enabling speaker identification and transcription from recorded meetings.

### Automatic Meeting Minutes Generation

- Orchestrated the creation of an automated meeting minutes solution powered by *FastAPI*, *LLama 3.2*, and *GPT-4o*, adhering to predefined templates.
- Applied advanced *prompt engineering* techniques to generate tailored summaries from *Conway* transcriptions.
- Incorporated a *IndicTrans2* model to deliver multilingual meeting minutes.

**Analyst Programmer** | *Synesis IT PLC, Dhaka, Bangladesh*

Nov 2020 – Apr 2022

### Denoiser System for Conway

- Integrated an *RNN* denoiser module into *Conway*'s audio system, significantly improving audio quality through a WASM-based design optimized for lightweight devices. The module is operating with browser *WebRTC API*, and has been used for over 3000 hours.
- Developed an automated *VAD* service that dynamically unmutes microphones only when the user speaks, improving noise control in meetings.

**Senior Programmer** | *Synesis IT PLC, Dhaka, Bangladesh*  
*Ekipay - An All-in-one Platform for Utility Bill Payment*

Jun 2018 – Oct 2020

- Architected a centralized billing platform combined with leading utility service providers in Bangladesh, leveraging *Spring Boot, Spring Data, PostgreSQL, RabbitMQ*, and *Eureka*.
- Built a payment aggregator platform, facilitating integration with multiple bank gateways and processing over 25 million transactions till now.

**Programmer** | *Synesis IT PLC, Dhaka, Bangladesh*  
*Automation Systems for Organisations*

Jun 2016 – May 2018

- Conceptualized and developed automation platforms with *.NET, Angular* and *Oracle DB*, that digitalize time consuming paper based processes, for *Bangladesh Standards and Testing Institution(BSTI)* and *Bangladesh Bureau of Statistics(BBS)*

## EDUCATION

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**Bangladesh University of Engineering and Technology**  
*B.Sc. in Computer Science and Engineering*

Feb 2011 – Mar 2016  
*CGPA: 3.12/4.0*

## SKILLS

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**Languages:** Java, C#, Python, JavaScript/TypeScript, SQL

**Frameworks:** Spring Boot, ASP.NET, FastAPI, ReactJS, Angular

**Concepts:** System Design, Stateless, Caching, Authentication, JWT, OAuth2, Encryption, Load Balancing, Proxy, CDN, CI/CD, Design Patterns, Microservice, Distributed System, Pub Sub, Storage

**Tools:** Git, Docker, JUnit, Linux, Cursor, VS Code, IntelliJ IDEA, Azure Cloud Services, GraphQL, Oracle DB, MySQL, PostgreSQL, MongoDB, Liquibase, RabbitMQ, Apache Kafka, Redis, Eureka, Hystrix, Spring Cloud Gateway, Maven, Jenkins, SonarQube, Elasticsearch, Prometheus, Grafana, NPM,  $\text{\LaTeX}$

**Libraries:** WebRTC, JQuery, Langchain, Langgraph, Pandas, NumPy, Matplotlib

## ACHIEVEMENTS

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- Led an R&D team for over 2 years, focusing on advancing ASR technology and enhancing NLP-related tasks
- Received *Best Team Lead Award* on *Synesis IT PLC* Townhall Q3, 2024
- Completed 500+ problems on *Leetcode*