Nayeem Islam

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EXPERIENCE

Senior System Analyst | *Synesis IT PLC, Dhaka, Bangladesh*   Jun 2024 – Present

- Engineered a scalable full-stack web application to enable streaming 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 *Convay*, 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, resulting in detection of 90%+ issues before reaching production environments.
- 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 for 33% faster inference and implemented a *FastAPI*-based pipeline to streamline model interactions.

System Analyst | *Synesis IT PLC, Dhaka, Bangladesh*   Apr 2022 – May 2024

- Spearheaded the development of a multilingual transcription system for *Convay* meetings, achieving accurate transcription for over 200 hours of content through advanced speaker separation techniques.
- Enhanced transcription accuracy for Bangla by 7% through fine-tuning *Whisper medium* ASR models.
- Investigated and resolved 5 primary challenges unique to online meeting environments, and 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.
- Orchestrated the creation of an automated meeting minutes solution powered by *FastAPI, LLama 3.2*, and *GPT-4o*, adhering to predefined templates and advanced *prompt engineering*.

Analyst Programmer | *Synesis IT PLC, Dhaka, Bangladesh*   Nov 2020 – Apr 2022

- Integrated an *RNN* denoiser module into *Convay*'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 by 25%.

Senior Programmer | *Synesis IT PLC, Dhaka, Bangladesh*   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.

Programmer | *Synesis IT PLC, Dhaka, Bangladesh*   Jun 2016 – May 2018

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

EDUCATION

Bangladesh University of Engineerting and Technology   Feb 2011 – Mar 2016
B.Sc. in Computer Science and Engineering   *CGPA: 3.12/4.0*

Skills

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, LaTeX

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

Achievements

- 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*