MD SAMIUL ISLAM

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Experiences

Software Development Engineer I **IQVIA (Fortune 500 Company)** *Dhaka, Bangladesh* **10/2023 - Present**

- Developing an Agentic AI system in Python using LangGraph, powered by LLMs and knowledge graph algorithms for structured reasoning and decision-making.
- Developed a distributed summarization workflow to process massive datasets (10,000+ rows) in parallel, overcoming LLM token window limitations and facilitating structured decision-making within a LangGraph agent.
- Refactored a highly resilient, distributed ETL workflow in Python using FastAPI and Celery. Engineered the data ingestion layer to process millions of events at a massive scale, employing a distributed **jitter** strategy to mitigate the thundering herd problem and maximize processing efficiency.
- Optimized performance with database partitioning and sharding, delivering scalable solutions for increased workloads.

Software Engineer **Brain Station 23** *Dhaka, Bangladesh* **01/2021 - 10/2023**

- Led the design and development of enterprise-level microservice applications utilizing cutting-edge technologies such as Go, MongoDB, Redis, PostgreSQL, Elasticsearch. Realized a 15% cost reduction through effective caching implementation and concurrency.
- Designed and implemented scalable APIs and background workers for ETL tasks using Python, Django, AWS, Celery, and Elasticsearch, processing millions of license requests daily. Achieved a notable 20% performance optimization through crafted DB queries.
- Led end-to-end development of various products, encompassing system requirement identification, partner dependency management, workload balancing, software implementation, engineering, testing, and configuration of metrics, alarms, monitors, and dashboards.

Skills

- Python | Django | FastAPI | LangGraph | Golang | Gin
- PostgreSQL | Snowflake | Elasticsearch | MongoDB | Redis | RabbitMQ | SQLite
- Docker | Celery | AWS Bedrock | AWS SageMaker | Serverless | Grafana | Git | CI/CD | Unit Testing
- Microservices | Distributed Systems | ETL | Backend | Data Engineer | Problem Solving | Leadership

Education

Bachelor of Science **BRAC University** *Dhaka, Bangladesh* **01/2017 - 06/2021**

- Major in Computer Science

Projects

- **AI Assistant (Python, Langgraph, FastAPI, Langsmith, LLMs):** Architected and deployed a cutting-edge Agentic AI system leveraging LangGraph for autonomous decision-making and natural language to SQL generation. The system, built on a scalable FastAPI and Kubernetes microservices architecture, features robust data validation, intelligent tool calling, and comprehensive observability with Langsmith.
- **Distributed URL Shortening Service (Python, Django, PostgreSQL, Hashing Algorithms, JavaScript):** Engineered a high-availability URL shortening service to handle millions of requests with low latency. Built a scalable URL generation system using a transactional counter-range allocation method to ensure efficient, concurrent URL creation. Optimized service performance with a multi-tier caching system and implemented user authentication for secure URL creation and management, while maintaining strong data consistency.
- **Product Compliance Monitoring Software**(*Django-rest-framework, PostgreSQL, Elasticsearch, Amazon Open Search, Celery, Amazon Simple Queue Service, React*)**:** *Developed a Django-rest-framework backend and React frontend, empowering 360-degree monitoring of global health, safety, and environmental regulations for diverse products. Utilized Elasticsearch for robust full-text search capabilities and PostgreSQL as the primary database. Implemented a sophisticated system for enhanced regulatory compliance.*

Leadership & Mentorship

- Received **Silver** recognition from IQVIA for demonstrating strong leadership by ensuring high-quality deliverables and actively mentoring junior team members.
- Served as an IT Instructor (05/2022-10/2023), providing in-depth training in Python and Django to equip individuals with industry-ready skills.

Achievements

- Secured **Champion** title at the BRACU Intra University Programming Contest in 2017 and 2018.
- Attained the 5th position nationwide in the IEEE Xtreme 13.0 competition (2019).
- Twice recognized on the Vice Chancellor's List for achieving a perfect 4.00 CGPA.