Sagnik Chatterjee

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EDUCATION

Manipal Institute of Technology   Manipal, IN
Bachelor of Engineering in Computer Science and Engineering   *Jul 2018 – Jul 2022*

EXPERIENCE

Software Developer   Sept 2022 – Present
IBM India   *Gurgaon, India*
- As part of the CLDP Team, responsible for developing services to ensure customer identification uniqueness across multiple OMC providers and building data warehousing solutions.
- Developed and integrated Java middleware with gRPC services to query data warehouses and provide data and analytics to customers and IOCL leadership.
- Utilized Kubernetes for service orchestration and implemented Prometheus for monitoring and performance tracking.

Independent Research Assistant / Technology Consultant   May 2023 – Jul 2023
Kasturba Medical College   *Manipal, India*
- Explored potential of using Large Language Models (LLMs) in medical diagnosis and patient onboarding in hospitals.
- Integrated LLAMA3 with FastAPI backend and Langchain to create "agentic" driver patient visit summaries and generated dashboard for clients(doctors) to monitor the patient diagnosis summaries and integrated that with a Svelte frontend.
- Led an 8-person development team in designing, building and deploying integrated microservices, providing technical mentorship and removing roadblocks to ensure successful delivery.

Software Developer Intern   Jan 2022 – July 2022
IBM India   *Gurgaon, India*
- Contributed to the HRMS team, responsible for developing and maintaining an in-house HR management software to help IOCL employees manage dealer relationships.
- Developed and maintained an ETL pipeline for data ingestion into a centralized Oracle RDBMS using Snowflake, Apache Airflow, Python with Siebel.
- Integrated Prometheus for monitoring the performance and reliability of ETL services.

PROJECTS

rex | *Go* – Regex Engine Implementation   June 2024
- Built Regex Engine from scratch using Finite State Automata principles; core module of Vanara Project (JavaScript-like runtime in Go), providing regex matching capabilities for the compiler.

parso | *TypeScript, Effect.ts* – Parser Combinator Library   July 2024
- Developed lazy parser combinator library using advanced TypeScript features and functional programming concepts, implementing backtracking and sophisticated error reporting.

franz | *Go, PostgreSQL, gRPC* – Event Streaming Platform   May 2024
- Implemented mini event-streaming platform with Pub/Sub model, featuring Topics/Partitions and Leader-Follower Replication for fault tolerance.

POSITIONS OF RESPONSIBILITY

Technical Mentor – CLDP Team, IBM   Jan 2024 – June 2024
- Led onboarding initiatives for new interns, providing comprehensive guidance on CLDP architecture and core distributed systems principles; created documentation and conducted knowledge transfer sessions on Apache Kafka and event streaming services.
- Mentored team members in creating technical design documents for feature changes, establishing best practices for architecture documentation and system design proposals.

TECHNICAL SKILLS

Languages & Tools: Python, Go, TypeScript, C, SQL, Java, Git, Docker, Kubernetes
Technologies: Apache Kafka, HBase, gRPC, FastAPI, SvelteKit, AWS-Redshift, Redis
Certifications: AWS Cloud Practitioner
Other Skills: Lean4 Theorem Proving