VINATHA VISWANTAHAN

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EDUCATION

Masters: Data Analytics Engineering, Northeastern University, Seattle, WA (2025 – Present)
Bachelors: Chemical Engineering, Anna University, Chennai, India (2017 – 2021)

- University Rank Holder (2021) & Outstanding CE Merit Scholarship (2018-2020)

WORK EXPERIENCE

Software Engineer at **Citi Bank (CSIPL) – DLF IT Park** (Chennai, India) (Nov 2022 – Dec 2024)

- [Real-Time Data Infrastructure] Built and maintained high-availability, low-latency backend service enabling real-time financial data synchronization across globally distributed systems.
  - Lead the integration of IBM DB2 Analytics Accelerator (IDAA) into core microservices, reducing analytical data latency from 2 hours to under 30 minutes, significantly enhancing reporting accuracy.
  - Implemented state-driven workflow automation using Spring State Machine to track and recover from service failure states, increasing system resilience and reducing manual intervention.
  - Designed and delivered an event-driven ingestion pipeline leveraging Apache Kafka, ensuring guaranteed message routing, consumer-side fault isolation, and scalable data processing.
- [Internal Developer Platform & Bootstrapping Tools] Led the design and rollout of reusable developer tooling to standardize backend service creation and streamline new project onboarding.
  - Developed a Java-based framework with embedded integrations for service templating, logging, and configuration, reducing setup time by 16–20 engineering hours per project and aligning with internal development standards.
  - Engineered a MongoDB-based caching abstraction to support stateless service design and improve response times across common read-heavy paths.
- [Regulatory Reporting & Financial Compliance Systems] Automated and optimized regulatory reporting workflows for real-time financial data compliance with international banking authorities.
  - Architected a scalable reporting engine to support hourly treasury report generation for Monetary Authorities of Singapore and Hong Kong, transitioning critical deliverables from end-of-day batch runs to near-real-time pipelines.
  - Enabled compliance-focused observability by integrating audit trails, alerting mechanisms, and fallback logic into reporting workflows.

Applications Analyst at **Zifo Technologies – DLF IT Park** (Chennai, India) (Aug 2021 – Nov 2022)

- [ELN System Extensions & Automation Frameworks] Contributed to backend platform customization and automation tooling for ELN/LIMS systems used in pharmaceutical research environments.
  - Engineered configurable plugins to automate ELN field population and validation in Sapio LIMS, reducing manual input workloads and streamlining experiment setup.
  - Built a modular audit logging subsystem that captured granular before/after state changes in records, facilitating secure change tracking and rollback capabilities.

PROJECT EXPERIENCE

- [Realtime Data Streaming Pipeline] Developed custom data producers in Java and Python, benchmarking 60K+ and 2K+ records/sec respectively, highlighting trade-offs in concurrency models (JVM vs. Python's GIL).
- [AI/LLM - SQL Assistant] Developed a chatbot leveraging Groq's LLaMA 3.3 to convert natural language into accurate SQL queries with 95%+ success.
- [AI/LLM - HR Onboarding Assistant] Designed an AI-powered onboarding assistant using RAG, delivering personalized, real-time role-specific answers by combining vector semantic search with session-aware caching to enhance relevance and reduce redundant queries.
- [AI/LLM – MCP based Document Search] Designed a real-time document assistant that dynamically searches the web based on user queries to fetch the latest documentation. Used a custom MCP server with a chatbot client to return accurate, natural language summaries using OpenAI's o4-mini.
- [Huffman Coding – File Compression & Decompression] Developed a lossless Huffman Compression System in Java, reducing file size by ~33% using prefix coding with hash maps, trees, and priority queues.

SKILLS

Languages: Java, Python, SQL
Tools & Platforms: Kafka, MongoDB, Postgres, Github, Bitbucket, Jira, Confluence, OpenShift, Splunk, Docker