VINATHA VISWANATHAN

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Seeking Summer 2026 Software Engineering Internship

EDUCATION

Master of Science in **Computer Science**, Northeastern University, Seattle, WA | *GPA: 4.0/4.0*   (2025 – Expected 2027)
Bachelor of Technology in Engineering, Anna University, Chennai, India | *GPA: 3.98/4.0*   (2017 – 2021)

EXPERIENCE

Software Engineer at **Citi**   (2022 –2024)

- **Real-Time Data Streaming Infrastructure:** Worked on initiatives to enhance cross-region data consistency, system observability, and fault-tolerant microservice performance
  - Led the integration of IBM Db2 Analytics Accelerator (IDAA) into Spring Boot microservices, reducing analytical data latency from 2 hours to under 30 minutes
  - Collaborated with stakeholders to implement persistent State Machines, minimizing Mean Time to Recovery (MTTR) by 35%
  - Developed an event-driven ingestion pipeline leveraging Apache Kafka, improved throughput by 2.5x and reduced message delivery latency by 40%
  - Integrated JUnit and Mockito test frameworks into Jenkins CI/CD pipelines, achieving over 85% code coverage
- **Internal Microservice Bootstrapping Framework:** Worked on a developer-facing infrastructure to accelerate service setup, streamline data access, and improve service health monitoring
  - Engineered a framework to standardize runtime configurations through dependency injections, reducing setup time by 16–20 engineering hours
  - Implemented a multi-node cache with LRU eviction, reducing latency for frequent lookups by 75%
  - Deployed Splunk integration for metrics tracking, using structured logs and HTTP Event Collector to minimize incident response time by 30%
- **Regulatory Reporting and Financial Compliance Systems:** Worked on a platform to identify inconsistencies between source data and regulatory requirements, ensuring standardized formats across downstream applications
  - Designed a Directed Acyclic Graph (DAG) based report validation workflow to model dependencies between multiple report components, improving error detection accuracy by over 50%
  - Developed an AI chatbot using retrieval-augmented generation (RAG), trained on internal regulatory documents to provide contextual guidance on complex data field discrepancies

PROJECTS

- **Order Fulfillment Diagnostic AI chatbot | MLH Data Hackathon 2025 | Track Winner:** Built an assistant to automate incident triage workflow that helps identify the root cause for unfulfilled orders
  - Utilized GPT-4 with the Model Context Protocol (MCP) Server to orchestrate dynamic tool execution
  - Designed SQL context configuration using JSON-based incident triage rules to provide the LLM with schema awareness across MySQL tables
  - Implemented custom functions to autonomously select and execute SQL queries with automated retries
  - Developed a chat interface with FastMCP for real-time bidirectional communication between support agents and the LLM, maintaining conversation history
- **Terminal Assistant AI chatbot | MLH Open-Source Hackathon 2025 | Top 20 Overall:** Built an MCP tool that helps a user execute terminal commands that navigates, search, and organize your local files through natural conversation
  - Implemented validation mechanisms to restrict command workflows, enforce allowed directories, and block unauthorized commands
  - Designed the system to work seamlessly across macOS and Windows, supporting secure and efficient interaction between LLM and the desktop environment
- **Audit Tracking Service | Citi's Digital Innovation Challenge Hackathon 2023:** Developed an audit service to compare transaction records, identifying and logging key differences
  - Leveraged a Map Difference Algorithm to accurately identify added, deleted, or modified transactions across historical logs, enabling near real-time audit insights
  - Stored transaction record snapshots prior to comparisons, enabling automatic restoration in case of failures and ensuring data integrity

SKILLS

Programming Languages: Java, Python, SQL, JavaScript, CSS, HTML
Databases: Oracle, PostgreSQL, IBM Db2, MongoDB
AI/ML Frameworks: RAG, MCP, LangChain
Proficiencies: Data Structures & Algorithms, Object-Oriented Programming, Distributed Systems
Tools & Platforms: Kafka, GitHub, Kubernetes, Docker, JUnit, Mockito, Spring Boot, RESTful APIs, Postman, Jenkins