

VINATHA VISWANATHAN

Email: vinatha.viswanathan1709@gmail.com | Phone: 425-832-0307

LinkedIn: <https://www.linkedin.com/in/vinatha-viswanathan/> | GitHub Portfolio: <https://vinathaviswanathan.github.io/>

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)
<ul style="list-style-type: none">Real-Time Data Streaming Infrastructure: Worked on initiatives to enhance cross-region data consistency, system observability, and fault-tolerant microservice performance<ul style="list-style-type: none">Led the integration of IBM Db2 Analytics Accelerator (IDAA) into Spring Boot microservices, reducing analytical data latency from 2 hours to under 30 minutesCollaborated 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 coverageInternal Microservice Bootstrapping Framework: Worked on developer-facing infrastructure to accelerate service setup, streamline data access, and improve service health monitoring<ul style="list-style-type: none">Engineered a framework to standardize runtime configurations through dependency injections, reducing setup time by 16–20 engineering hoursImplemented 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%Report Validation and Data Standardization: Worked on identifying inconsistencies between source data and regulatory guidelines, ensuring standardized formats across downstream applications<ul style="list-style-type: none">Designed a Directed Acyclic Graph (DAG) based report validation workflow to model dependencies between multiple report components, improving error detection accuracy by over 50%Executed data correction and remediation workflows to comply with the regulatory standards across multiple downstream systems, achieving a 95% reduction in data field discrepancies	

PROJECTS

<ul style="list-style-type: none">Incident Root Cause Analysis 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<ul style="list-style-type: none">Utilized gpt-5 with the Model Context Protocol (MCP) Server to orchestrate dynamic tool executionDesigned SQL context configuration using JSON incident triage rules to provide the LLM with schema awarenessImplemented custom functions to autonomously select and execute SQL queries, achieving over 85% accuracyDeveloped a chat interface with FastMCP for real-time bidirectional communication between DRI and LLM, maintaining conversation historySecure Shell MCP AI Agent MLH Open-Source Hackathon 2025 Top 10 Overall: Built an MCP server that helps a user execute commands to navigate, search, and organize local files through natural conversation<ul style="list-style-type: none">Implemented validation mechanisms to restrict command workflows, enforce allowed directories, and block unauthorized commandsDeveloped functionality to work seamlessly across multiple OS, ensuring cross-platform compatibilityReduced file navigation and search time by 60% compared to manual CLI usageHR Onboarding AI Assistant Citi's Digital Innovation Challenge Hackathon 2023: Built an AI chatbot leveraging LLM and Retrieval-Augmented Generation (RAG) to deliver role-specific onboarding guidance<ul style="list-style-type: none">Developed a microservice with FastAPI backend and persistent session storage, supporting scalable multi-user onboarding interactionsImplemented context retrieval leveraging ChromaDB embeddings for high-dimensional semantic search and dynamic context windowing to maintain session continuityIntegrated user metadata and role-based filtering to dynamically tailor responses	
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SKILLS

Programming Languages: Java, Python, SQL, JavaScript, CSS, HTML

Databases: Oracle, PostgreSQL, IBM Db2, MongoDB

AI / Automation: RAG, MCP, LangChain, OpenAI API

Proficiencies: Data Structures & Algorithms, Object-Oriented Programming, Distributed Systems

Tools & Platforms: Kafka, GitHub, Kubernetes, Docker, JUnit, Mockito, Spring Boot, RESTful APIs, Postman, Jenkins