BHAVANI SHANKAR AJITH

Stony Brook, New York

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Education

Stony Brook University (SUNY)	Stony Brook, NY
Master of Science in Data Science — GPA 3.73/4.00	*Expected May 2026*
SRM Institute of Science and Technology	Chennai, India
Bachelor of Technology in Computer Science (AI and ML) — GPA 9.66/10.0	*Graduated June 2024*

Experience

Software Engineer Intern — June 2024 – August 2024
Navitas Business Consulting — *Herndon, VA*

- Engineered a high-availability backend synchronization service integrating legacy databases with the ARBenefits portal; served 184,000+ users with real-time eligibility checks, directly reducing processing latency by 40%
- Took ownership of data integrity by implementing PostgreSQL triggers and an audit logging system; eliminated manual reconciliation workflows and ensured consistent data state across distributed environments
- Collaborated with engineering teams to modernize database management; evaluated trade-offs between Flyway and Liquibase and drove the successful adoption of Liquibase for version-controlled schema migrations
- Developed a comprehensive integration testing suite using Testcontainers (85% coverage), validating logic against production-like dependencies to protect systems from downtime and data inconsistencies

Deep Learning Apprentice — May 2022 – October 2022
NVIDIA Jetson AI Industry Training at SRM — *Chennai, India*

- Optimized an end-to-end inference pipeline processing 10,000+ daily images; achieved sub-100ms latency through TensorRT optimization, mirroring requirements for high-throughput discovery platforms
- Built a hardware-accelerated data pipeline using NVIDIA VPI, offloading CPU-bound operations to GPU and improving system throughput by 60% for real-time processing tasks
- Profiled system performance using Nsight Systems to identify bottlenecks; refactored memory architecture to Unified Memory, eliminating 40% of data transfer overhead
- Containerized production services with Docker, enabling consistent deployment and automated health monitoring across edge devices

Projects

Intelligent Search & Discovery Platform — Semantic Retrieval Engine
Spring Boot, Qdrant (Vector DB), PostgreSQL, React, Docker, Ollama

- Architected a distributed semantic search system processing 100k+ document chunks; enabled sub-100ms retrieval latency by optimizing HNSW vector indexing in Qdrant, directly applicable to merchant discovery use cases
- Built a robust backend API with Spring Boot Microservices to handle complex search queries; implemented semantic chunking and embedding generation (nomic-embed) to improve search result relevance
- Ensured system reliability through rigorous integration testing with Testcontainers, validating data isolation and search accuracy against real PostgreSQL and Qdrant instances
- Delivered a full-stack discovery application with JWT authentication and async processing; designed scalable RESTful APIs enabling seamless interaction between the React frontend and backend services

MarketPulse: Distributed Streaming System — Data Engineering Scale
Python, Kafka, Snowflake, dbt, Airflow, MinIO, Streamlit

- Designed a distributed data platform processing 3,000+ records/min via Kafka streaming; engineered for high throughput and fault tolerance using MinIO storage and Snowflake warehousing
- Implemented multi-layer data transformation (Bronze-Silver-Gold) with dbt, ensuring data quality and consistency for downstream analytics; reduced query latency from minutes to seconds
- Orchestrated complex workflows with Apache Airflow, implementing exponential backoff retry logic and automated alerting to maintain system uptime and reliability
- Built interactive dashboards with Streamlit and SQL, providing real-time visibility into market trends and validating the end-to-end accuracy of the streaming pipeline

Technical Skills

Languages & Backend: Java, Python, SQL, C++, JavaScript, Spring Boot, FastAPI, REST APIs, Microservices, JWT
Data & Databases: Kafka, Airflow, dbt, Snowflake, PostgreSQL, Qdrant (Vector Search), ETL, Data Modeling
Cloud & DevOps: AWS (EC2, S3), Docker, Git, CI/CD, Testcontainers, Linux, MinIO, Profiling
AI/ML Tools: TensorFlow, TensorRT, PyTorch, Ollama, RAG Pipelines, Vector Embeddings, Semantic Search

Certifications

OCI 2025 Generative AI Professional, OCI 2025 Data Science Professional