

Zeyu Li

Vancouver, BC • 6048301878 • zeyujames@outlook.com • [LinkedIn](#) • [Tech Portfolio](#) • [GitHub](#)

EDUCATION

Master of Science (M.S.) in Computer Science • Northeastern University Vancouver, BC • 09/2023 - 12/2025

Master of Science (M.S.) in Supply Chain Analytics • Rutgers University New Brunswick, NJ • 09/2020 - 09/2021

Bachelor of Arts (B.A.) in Economics • Purdue University West Lafayette, IN • 08/2016 - 05/2020

SKILLS

- **Programming Languages:** Java, Python, Golang, C++, SQL, HTML, CSS
- **Frameworks and APIs:** Java SpringBoot, Go Gin, Flask, RESTful API, Microservices, gRPC
- **Databases and Messaging:** MySQL, MongoDB, DynamoDB, Redis, RabbitMQ, Apache Kafka
- **Cloud and Infrastructure:** AWS (EC2, ECR, ECS, Lambda, RDS, S3), Terraform, Docker, Linux, Git, Maven

WORK EXPERIENCE

Research Assistant – Tutoring System HPC Backend Development 01/2025 - 05/2025
Northeastern University Vancouver, BC

- Engineered an automated Knowledge Graph pipeline on an HPC platform, automating end-to-end PDF-to-graph processing with containerized Phi-4 SLM, **reducing manual preprocessing effort by 15%**.
- Architected a distributed backend to bridge firewalled HPC nodes (Arbutus/Cedar), enabling secure, remote job execution via a **reverse SSH tunnel**, containerized gRPC, and a Flask control plane.
- Automated the full job lifecycle from submission to results using Paramiko for Slurm orchestration and outlined a **multi-cloud (AWS) expansion strategy** for future scalability of GPU workloads.

International Logistics Coordinator 02/2022 - 07/2023
Aura Home, Inc. New York City, NY

- Managed logistics operations for 15+ daily container shipments across US, Canada, UK, and Europe, **ensuring 98%+ on-time** delivery through automated tracking systems.
- Developed data analytics solutions using SQL and Excel to optimize inventory classification, **reducing storage costs by 12%**.
- Streamlined warehouse operations through Oracle ERP and warehouse management system integration, improving inventory accuracy and **reducing processing discrepancies by 5%**.

PROJECTS

High-Concurrency CQRS Ticketing Platform (Java Spring Boot, Redis, Lua, DynamoDB, MySQL, JMeter)

Summary: Engineered a high-concurrency ticketing platform for arena scale concert flash sales to support over 10,000 concurrent users while preventing overselling and ensuring data consistency.

- Designed a **CQRS-based** ticketing service for concert flash sales with decoupled API and consumer services, separating high-volume writes with DynamoDB from analytical reads with MySQL to enhance scalability.
- Engineered a **lock-free O(1) seat validation** using Redis bitmaps and atomic Lua scripts, eliminating external locks and ensuring correctness under contention.
- **Achieved around 6,200 RPS throughput** in a 1,000-thread JMeter test, leveraging RabbitMQ for asynchronous persistence with manual ACKs ensuring durable transaction processing.

Distributed Albums Storage Service (Java Spring Boot, Golang, RabbitMQ, MongoDB, MySQL, Grafana, AWS)

Summary: Engineered a distributed album storage and review service by **systematically benchmarking technology stacks** (Go vs. Java, MongoDB vs. MySQL) to achieve optimal performance on AWS.

- Deployed the Docker containerized services on AWS EC2, managed by an Load Balancer and Auto Scaling group .
- Benchmarked Go vs. Java and MongoDB vs. MySQL, selecting a Go & MongoDB stack that **achieved 2,407 RPS and reduced 99th percentile latency by 27%** (from 417ms to 303ms).
- Resolved database bottlenecks by tuning Java thread pools and RabbitMQ consumer, **improving server CPU utilization from 65% to 90% and sustaining around 774 RPS** (<40ms latency) under a 120,000-request load.