

# HARSHA VIPPALA

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## SUMMARY

Software Engineer with 5 years of experience designing and deploying scalable, cloud-native applications. Expertise in **Node.js, TypeScript, NestJS, and AWS** with a strong background in **microservices architecture, API development, and distributed systems**. Proven ability to optimize system performance and build resilient backend solutions handling millions of transactions. Led the development of a self-checkout mobile platform processing **\$500K/month in orders** along with **IoT integrations** enhancing customer experience across 60+ stores in US & CA. Always seeking challenging engineering problems to solve at scale.

## TECHNICAL SKILLS

**Backend Development:** Node.js, TypeScript, NestJS, Java, SpringBoot, Python

**Cloud & DevOps:** AWS (Lambda, EC2, S3, ECS, CloudWatch, IoT Core, IAM), Docker, Kubernetes

**API & Integration:** RESTful APIs, GraphQL, gRPC, Kafka, Microservices Architecture, Serverless Architecture

**Databases & Storage:** MongoDB, PostgreSQL, DynamoDB, AWS RDS, Redshift, NoSQL Databases

**Monitoring & Observability:** New Relic, Datadog, CloudWatch, Logz.io, Grafana

**Testing & CI/CD:** Jest, JUnit, Cypress.io, Charles Proxy, Jenkins, Gitlab CI/CD, Bamboo, Bitbucket

## WORK EXPERIENCE

**Software Engineer II** | *7-Eleven* | Irving, TX | February 2024 – Present

- **Architected and led** development of serverless microservices for 7-Eleven's **self-checkout mobile application** using **AWS Lambda & MongoDB**, handling **\$500K+ in transactions per month** across **60+ stores**, ensuring scalability and fault tolerance.
- **Designed and implemented IoT integrations** with AWS IoT Core, creating a QR code validation system with synchronized audio feedback, enhancing in-store customer experience and allowing store managers to verify orders in real time.
- Led the initiative to introduce EBT payments, driving the **end-to-end design, implementation, and rollout**. Enhanced the tax engine for accurate EBT tax calculations and implemented split payments, allowing customers to use multiple payment methods in a single transaction. Successfully piloted the solution in select stores before a **full-scale deployment**.
- **Optimized MongoDB query performance** by **caching frequently purchased items using Redis**, reducing redundant database calls and minimizing query load, resulting in **40% faster response times** for high-traffic API calls.
- **Established monitoring and alerting infrastructure** using **CloudWatch** and **New Relic** tracking **key metrics** for team-owned services. Configured **automated alarms** to notify the team of critical issues and built dashboards to monitor performance, ensuring **seamless rollout tracking and proactive issue resolution**.

**Senior Software Engineer** | *Liberty Mutual Insurance* | Boston, MA | February 2023 - February 2024

- **Developed and integrated NestJS APIs** to connect with third-party insurance vendors (Zebra, Insurify), enabling **real-time quote generation**. Automating sales workflows and eliminating manual effort for business teams. Enabled seamless monthly user signup data exchange, expanding customer reach and **driving platform growth** through new acquisition channels.
- **Built GraphQL and gRPC-based APIs**, ensuring seamless integration with vendor services and optimizing response times.
- **Led a team of 3 interns** in developing a product availability microservice with AWS Lambda & DynamoDB, streamlining product quoting for existing services.

**Software Engineer** | *Liberty Mutual Insurance* | Boston, MA | May 2021 - February 2023

- Developed and optimized backend quoting services for the insurance platform, handling **87,000+ monthly visits**.
- Implemented user interaction tracking features, providing business teams with **real-time insights** to drive **data-driven product decisions**, resulting in a **7% increase in conversion rates**.
- Resolved frequent API timeouts and **improved scalability** by migrating **high-traffic backend services** to async/await patterns, eliminating **blocking operations** and ensuring **smoother request handling**, reducing **system downtime and latency spikes**.

## EDUCATION

New York University, New York, NY

May 2021

- Master of Science in Computer Engineering

KL University, India

May 2019

- Bachelor of Technology in Computer Science & Engineering