

Tushar Singh

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Education

San Jose State University

San Jose, CA

- **Master of Science, Software Engineering** | GPA: 3.7/4.0 Jan 2025 – Expected Dec 2026
- Coursework: Enterprise Distributed Systems, Software Systems Engineering, Enterprise Software Application

National Institute of Technology

Meghalaya, India

- **Bachelors, Computer Science & Engineering** | GPA: 3.5/4.0 Aug 2018 – Jun 2022
- Coursework: Data Structures & Algorithms, Object Oriented Programming, Database Management Systems, Computer Networks, Operating Systems, Agile Methodologies

Experience

Tekion Corp

Bengaluru, India

Software Engineer

Jul 2022 – Dec 2024

- Built and optimized real-time transaction status from **short-polling to Server-Sent Events**, reducing latency from over **3s to less than 500ms** and increasing Tekion pay adoption by over **45%**.
- Scaled a **microfrontend architecture** by integrating **Module Federation**, cutting initial bundle sizes by 33% and facilitating secure, dynamic code deployments.
- Optimized web performance by implementing **Next.js hybrid rendering model** (Static Site Generation + Client Side Rendering) for a vehicle comparison page, resulting in a **60% Largest Contentful Paint(LCP) reduction** and a transition from 'Poor' to 'Good' Google Lighthouse score.

Software Engineer Intern

Jan 2022 – Jun 2022

- Improved the developer experience by engineering a **JSON-driven forms engine** that automated custom form generation, reducing new dealer configuration time for engineering teams by **55%**.
- Authored a suite of **150** comprehensive **Unit Tests** using **Jest** and **RTL** for the Account Receivables module.
- Automated code quality checks by configuring **Git pre-commit hooks** and integrating a comprehensive test suite into the Account Receivable Module **Jenkins CI/CD pipeline**, increasing project-wide test coverage from **20%** to over **85%** and preventing bug regressions.

Technical Skills

- **Programming Languages:** JavaScript(ES6+), TypeScript, Java, C++, Python, SQL
- **Frontend:** Next.js, React.js, Redux, TanStack Query, Material UI, Jest, React Testing Library(RTL)
- **Backend:** Node.js, Spring Boot, FastAPI, Microservices, Spring Data JPA, JDBC, REST APIs, JUnit
- **Databases & Message Queues:** MySQL, NoSQL, Redis, RabbitMQ, Kafka, MQTT
- **AI/ML:** LLM Integration, LangChain, RAG, Vector Databases, Gemini API
- **DevOps/Cloud:** Git, Docker, Kubernetes, CI/CD(Jenkins), AWS (EC2, S3, Lambda)

Academic Projects

AI-Powered Customer Support Assistant | Python, FastAPI, LangChain, RabbitMQ, Docker, Kubernetes, Google GenAI SDK, Google AI Studio, ChromaDB, Amazon MQ, AWS(ECR, EC2), React, Next.js

[Github](#)

- Built an **AI semantic search (RAG)** over **jira** support tickets using **Gemini**, **LangChain**, and **ChromaDB**, delivering context-grounded answers with **80%** accuracy.
- Decoupled the long-running AI processing from the main API thread by implementing a **RabbitMQ**, slashing the **P95 API response time** from over **15s to under 100ms** (a 99% improvement) and eliminating UI freezes.
- Containerized all microservices with Docker, managed containers using Kubernetes and a Github Actions CI/CD pipeline to AWS, enabling repeatable builds/tests/deloys.

Restaurant Reservation & Discovery Platform | Spring Boot, MySQL, AWS (Cognito, Lambda, SES, ECR, Elastic Beanstalk), GitHub Actions, JaCoCo, JWT, Docker, CI/CD

[Github](#)

- Designed a secure, **role-based authentication** system using **AWS Cognito**, featuring an OTP login flow via custom **AWS Lambda triggers** and **JWT** for session management.
- Developed the core backend in **Spring Boot**, featuring a booking engine with a **MySQL-powered geospatial search**, conflict-detection logic, and email notifications via **Amazon SES**, reduced query times by **40%**.
- Established a complete **CI/CD pipeline** using **GitHub Actions** to automate builds, testing (**JaCoCo**), and the containerization of releases to **AWS ECR** for deployment on **AWS Elastic Beanstalk**.