

# Jyotsna Madhavi Mallu

San Jose, CA - 95124

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## Summary

Software Engineer with 8 years of experience in Node.js (Javascript) and Java, specializing in building large-scale, high-performance systems. Recently relocated to the San Francisco Bay Area and eager to contribute to innovative teams. Passionate about Generative AI with hands on experience integrating LLMs into production systems.

## Experience

### DP World

SOFTWARE DEVELOPMENT ENGINEER

Apr 2020-present

- Designed and built a **scalable** shipment tracking system using **Node.js**, enabling 3,000+ customers to track 1M+ container shipments in near real-time across global ports.
- Designed and implemented **event-driven distributed** shipment tracking data aggregation service, leveraging **Azure service bus queues** and Kubernetes to ensure fault tolerance and high availability.
- Developed **REST APIs** for shipment tracking, including shipment exceptions, event notifications, and geolocation tracking, integrating with Google Maps API. Experienced in RBAC and access control policies.
- Worked on **performance optimizations** and reduced API response times (from 5s to <1s in some cases) through caching, query indexing, Redis and **ElasticSearch**-based enhancements, improving system's scalability and efficiency.
- Prototyped a self-healing web scraper using **LLMs** (LLaMA 3 + OpenAI fallback) to auto-repair html selectors for non-API carriers, reducing on-call incidents by ~40% and improving update reliability for 1M+ shipments.
- Helped on the migration of a multi-tenant **Kubernetes** cluster to multiple single-tenant clusters, improving **fault tolerance**, security, and scalability.
- Developed and launched a pluggable feedback service, a reusable service with a UI component that integrates into shipment tracking application, enabling user feedback collection across different modules using **Python..**
- Took the initiative in establishing on-call playbooks, reducing support time by 60+ minutes per incident and improving onboarding efficiency for 20+ customers and these were adopted by 10+ team members to streamline onboarding and support.
- Mentored and guided junior engineers in distributed systems design, microservices architecture, conducting code reviews and architectural deep dives.
- Technologies: Node.js, Python, REST API, Redis, Azure Kubernetes, Unit Testing, Distributed Systems, LLMs, Generative AI**

### Pegasystems

India

SOLUTIONS ENGINEER

July 2017-Apr 2020

- Designed and worked on an **orchestration tool** for **RPA (Robotic Process Automation)** service, OpenSpan, and its integration into the Pega platform after Pega acquired OpenSpan, ensuring seamless execution of automation processes in remote VMs.
- Developed **REST APIs** for workflow orchestration and state management, facilitating start/stop lifecycle control of remote VMs and automation processes using **Java**.
- Worked on **WebSockets** for real-time health monitoring of remote robots, ensuring high availability and proactive issue resolution.
- Worked on a configuration management system for remote robot deployment, enabling dynamic configuration updates and centralized control.
- Technologies: Java, Unit Testing, WebSockets, REST API Design, Pega Framework.**

## Education

### Osmania University

India

BACHELORS IN COMPUTER SCIENCE AND ENGINEERING, CGPA 3.8

Sep 2013-May 2017

- Graduated with distinction and in top **10%** out of 250 graduates.
- Courses:** Databases, Data structures, Algorithms, Operating systems.

## Technical Skills

- Languages:** Java, JavaScript, Node.js, C, C++, HTML, CSS, Python(basic).
- Frameworks and Tools:** Express.js, Elastic search, PostgreSQL, Docker, Redis, Cloud (Azure/AWS), Kubernetes, Caching (Redis), NewRelic, LLMs, ELK Stack, Prometheus, Jaeger, OpenTelemetry.
- Concepts:** Data Structures, Algorithms, System Design, REST APIs, Databases, SQL, Distributed systems, Micro services, Event driven architecture, Generative AI, LLMs, RAGs.

## Awards & Achievements

- Received **3 awards** and 5 commendations for outstanding contributions at DP World. Consistently achieved **Excellent** performance ratings for three consecutive years.
- Received **WOW Award** at Pegasystems for demonstrating exemplary performance and delivering exceptional results in high- impact projects.
- Achieved **Gold Medal** in 10th grade from the state of Andhra Pradesh, India, with a score of 594/600, securing **2nd rank out of 100k+ students** in a standardized state-level examination.