Vinay Rahul Polavarapu

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EDUCATION

University of Texas at Dallas   **Aug 2022 - Dec 2024**
Master of Science in Computer Science   *Dallas,Tx*
National Institute of Technology Karnataka   **Aug 2017 - May 2021**
Bachelor of Technology in Material Science   *Surathkal, India*

TECHNICAL SKILLS

Languages and Databases: JavaScript/TypeScript, Python, Java, SQL, C, PostgreSQL, MongoDB, DynamoDB, Redis
Frameworks and Tools: Spring Boot, SQL, Docker, postman, Angular.js, Node.js, Express.js, Next.js, React, Redux, Ansible, Grafana, Kibana, Kubernetes, Flask, Django, Git, Linux, Jest, Pytest, Selenium, JUnit, Mockito
DevOps and Cloud: AWS, Azure, Google Cloud, CI/CD pipelines, Docker, Kubernetes, Git, GitHub, Jenkins
Relavent Coursework: Operating Systems, Machine Learning, Database design, Natural Language Processing, Artificial Intelligence, Information Retrieval, Computational Logic, Data Structures and algorithms, Design and analysis of Algorithms

WORK EXPERIENCE

Motorola Solutions   **Jun 2024 - Present**
Software Engineer

- Developed and maintained robust **Node.js** microservices for Motorola's **Web Dispatcher** application, handling real-time communication for over **10,000** concurrent users during peak times
- Resolved performance bottlenecks by optimizing **event loop** operations in **Node.js** applications, ensuring **non-blocking** execution for high-concurrency systems
- Implemented a scalable **WebSocket** server using **Socket.io**, enabling real-time updates for dispatchers and reducing latency in emergency communications by **80%**.
- Implemented complex front-end features using **JavaScript** and **Angular**, improving user interface responsiveness and reducing load times by **40%**.
- Utilized **Python** and **Bash scripting** to reduce audit workload by **25%**, boosting workflow efficiency and automating processes in a production environment.
- Integrated **Kafka** for real-time data streaming, enabling seamless communication between **microservices** and reducing system latency by **20%**.

University of Texas at Dallas   **Jan 2024 - May 2024**
Computer Science Student Assistant

- Engineered the backend for the **Dine on Campus** application using **Java** and **Spring Boot**, developing **RESTful APIs** and integrating with **Hibernate** ORM. Deployed on **AWS EC2** for scalability and implemented **GraphQL** for efficient data querying, reducing API payload sizes and improving query performance by **25%**.
- Containerized the application with **Docker**, implemented **Swagger** for API documentation, and boosted test coverage to **90%** using **JUnit** and **Mockito**, following Test-Driven Development (TDD) practices for enhanced reliability and code quality.

ICICI Lombard   **Aug 2021 - Jul 2022**
Software Developer

- Developed and implemented a high-performance **customer analytics dashboard** using **Node.js** and **Express.js**, integrating real-time data streams and reducing load times by **30%**, resulting in improved decision-making for customer retention strategies.
- Optimized both served-side and client-site rendering with **Node.js** and **React**, implementing **lazy loading**, **efficient component structuring**, and **strategic caching mechanisms**, resulting in a **60%** reduction in page load times and significantly enhanced user experience.

Yup Infotech   **May 2020 - Aug 2021**
Software Developer

- Spearheaded the development of a comprehensive **Employee Management System** using **Java** for backend services and **JavaScript (React)** for the frontend, significantly enhancing HR operations and employee engagement.
- Implemented a **microservices** architecture using **Java Spring Boot** and **Node.js**, optimizing system modularity and enabling a **70%** faster feature deployment process.
- Developed a responsive **single-page application (SPA)** using **React** and **Redux**, decreasing page load times by **50%** and elevating overall user experience.
- Optimized front-end rendering by **indexing virtual DOM** nodes for faster **DOM traversal** and manipulation in complex single-page applications.
- Integrated JWT-based **authentication** with **Node.js** for robust **security**, reducing unauthorized access attempts by **95%** and ensuring GDPR compliance

PROJECTS

- **Dynamic Tutoring System**: Architected a high-performance, **multi-threaded** tutoring platform using **POSIX** threads and **semaphores**, synchronizing 1000+ sessions with zero deadlocks and boosting throughput by **20%**

- **Sentiment and Weather Correlation**: Implemented an **Machine Learning** pipeline processing 100,000+ tweets and weather data, optimizing five models to achieve **20%** increase in precision and recall for sentiment-weather correlation analysis.