

Tarun Reddy Kesepally

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Professional Summary

Software Engineer with 4.5 years of experience building scalable Full-stack and Backend systems, with a focus on Conversational AI and HIPAA-compliant HealthTech. Successfully delivered an AI-driven dental diagnostics platform and engineered real-time analytics dashboards that reduced API latency by 30% for over 50 B2B clients. Expert in Java (Spring Boot), React.js, and Node.js, with specialized experience in AWS cloud-native applications and Python-based ML pipelines. Proven track record of optimizing application performance through Web Workers and high-efficiency database management in PostgreSQL and MySQL.

Technical Skills

- **Languages:** Java, JavaScript, C, C++, TypeScript, Python, SQL
- **Frontend:** React.js, Next.js, CSS, Bootstrap, jQuery
- **Backend & Frameworks:** Spring Boot, Spring JPA, Hibernate, Node.js, Express.js
- **Databases:** MySQL, PostgreSQL, Oracle, MongoDB, DynamoDB
- **Cloud & DevOps:** AWS (EC2, S3, Lambda), Docker, Kubernetes, Jenkins, GitHub Actions
- **Tools & APIs:** Git, Maven, Figma, OpenAI API, Clip Drop API
- **Practices:** Agile, Scrum, CI/CD, TDD
- **Machine Learning:** Linear & Logistic Regression, Ridge/Lasso, Decision Trees, Random Forest, KNN, Naive Bayes, K-Means, Hierarchical Clustering, DBSCAN, Ensemble Methods (Bagging, Boosting, XGBoost), Silhouette Score, Bias-Variance, ML model development using Python, NLP basics & Prompt Engineering

Experience

ReplyQuickAI

Aug 2025 - Present

Lead Frontend Engineer – DentalScan AI, Full-Stack Developer – N1 & N4 Telecom Platforms (Conversational AI) Remote, USA

- Launched a HIPAA-compliant dental diagnostic MVP that reduced patient intake friction by providing an AI-driven mobile entry system, securing data for 100% of initial pilot users through JWT-based authentication.
- Engineered a real-time Guided-Capture UI using video and canvas APIs with custom validation for blur, lighting, and framing, reducing unusable image submissions and streamlining the diagnostic workflow.
- Optimized performance by offloading image compression (JPEG laddering to ~0.6MB) and orientation fixes to Web Workers, maintaining main-thread blocking under 50ms.
- Developed a Clinic Dashboard featuring automated patient cadence management and a canvas-based signature system, reducing administrative overhead by automating the generation of D9996 insurance claims.
- Automated end-to-end lead conversion by developing "N1" (Live AI Call Handling), integrating Retell.ai, Bland-AI, and PlayHT to build autonomous voice agents that handled scheduling with 100% CRM sync accuracy.
- Eliminated manual booking errors by architecting a real-time calendar synchronization system for cal.com and Google Calendar, resulting in streamlined appointment management for 50+ B2B clients.
- Scaled automated customer outreach by building the "N4" SMS Campaign Engine using Twilio, which ensured 100% carrier compliance through automated opt-out logic and message throttling.
- Enhanced user productivity by designing a dynamic message composer with tag support, allowing 50+ B2B clients to launch personalized, high-volume campaigns without formatting errors.
- Reduced average latency by 30% across 20+ secure API endpoints by implementing advanced caching and optimized Spring Boot integrations with AI APIs.

Progress Solutions

Feb 2025 - Aug 2025

Software Engineer

Remote, USA

- Supported the senior engineering team in maintaining in-house web applications using Node.js and Express.js, ensuring consistent uptime for internal operations.
- Assisted in optimizing database performance by refactoring SQL queries and updating schemas in PostgreSQL and MySQL to improve data retrieval speeds.
- Collaborated in an Agile environment to identify and resolve functional bugs in REST APIs, improving the reliability of internal tools during development cycles.
- Contributed to the deployment of maintenance patches and participating in code reviews to ensure high-quality software standards.

Soft Buzz Technologies Pvt Ltd

Feb 2022 - Mar 2023

Junior Software Developer

India

- Developed a mobile-responsive web application that digitized the manual supply chain for a diverse customer base, enabling users to track live commodity prices and purchase supplies directly through a unified platform.
- Engineered a realtime price synchronization engine by integrating external market APIs using Java and Spring Boot, providing customers with instant visibility into fluctuating market prices and increasing daily user engagement
- Architected a fullstack Ordering & Inventory module with Spring Boot REST APIs and React.js, implementing a statemanaged shopping cart and secure checkout flow that automated manual order tracking and accelerated supplychain operations

- Integrated automated status notifications using Spring JPA and Hibernate to ensure real-time inventory updates, which improved fulfillment accuracy and reduced customer support inquiries by providing instant order visibility.
- Optimized hightraffic data systems by refactoring complex SQL queries in Oracle and MySQL, maintaining application stability throughout peak morning surges when pricing and ordering activity reached its daily maximum
- Streamlined the deployment lifecycle by containerizing the application using Docker and managing deployment via AWS EC2, ensuring the live pricing feed maintained high availability across multiple regions.
- Collaborated with the product team to refine the customer interface using direct user feedback, simplifying complex procurement workflows for nontechnical users in rural and suburban markets

Winota Softech Pvt Ltd

Jan 2020 - Feb 2022

Intern & Software Engineer

India

- Promoted from Support Engineer to Backend Contributor after identifying recurring system bottlenecks; developed core inhouse services using Spring Boot and SQL, which reduced system downtime by fixing architectural bugs
- Architected and optimized backend APIs with Spring Boot and TypeScript to handle highfrequency internal data requests, reducing application loading times and improving system responsiveness for the operations team
- Maintained 24/7 availability of internal business tools by monitoring backend health and applying performance patches with Spring Boot, preventing service interruptions during peak usage hours
- Reduced query response times by refactoring legacy MySQL queries and redesigning database schemas using SQL, resulting more efficient data handling and faster reporting for internal stakeholders
- Streamlined the deployment lifecycle by containerizing legacy services with Docker and migrating them to AWS EC2, enabling the infrastructure to scale with internal data growth
- Participated in the full Software Development Life Cycle (SDLC) using TestDriven Development (TDD) and Agile methods, ensuring all new internal features met performance and stability benchmarks

Projects

Smart Waste Management Dashboard Prototype - Full Stack + ML

- Developed a dashboard with a map view showing color-coded bins (Green, Yellow, Orange, Red) based on predicted fill percentage.
- ML Prediction: Forecasted bin fill levels (%) using Linear Regression and Random Forest Regressor, achieving an 85% prediction accuracy on historical data.
- Driver Auto-Assignment: Assigned nearest driver automatically using K-Nearest Neighbors (KNN) or distance-based algorithm for 50+ simulated drivers.
- Notifications: Real-time dashboard alerts for bins that are full or near full; optional simulated SMS/Email notifications.
- Frontend Interactions: Click a bin to view predicted fill %, last pickup, and assigned driver. Manual updates of bin status for simulation purposes.

Imagify - Full Stack AI SaaS Application

- Developed an AI-powered text-to-image generator using the MERN (Node.js, React.js) stack, integrating the Clip Drop API for image creation and the TMDB API for enhanced prompt data.
- Designed a credit-based generation system offering 5 free image generations per user, with Stripe integration for purchasing additional credits.
- Implemented user authentication and account management using MongoDB.
- Deployed the app on Render with full mobile responsiveness.
- Delivered an end-to-end full-stack solution combining real-time AI generation with secure payments and cloud deployment.

Education

Indiana Institute of Technology

May 2023 - Oct 2024

Master of Science, Information Systems

- **Coursework:** Information Security & IT Governance, Database Management, Engineering Management, Information Systems

KG Reddy College of Engineering & Technology

Jun 2018 - Aug 2022

Bachelor of Science, Computer Science Engineering

- **Coursework:** Java, C, C++, Data Structures & Algorithms, DBMS, AI/ML, SQL, Computer Science

Certifications

- AWS Certified Developer - Associate
- Oracle Certified Associate, Java SE
- Meta Front-End Developer Certificate
- Supervised Machine Learning - Andrew Ng (Coursera/DeepLearning.AI)
- Frontend Developer (React)