

# 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**

*Intern & Software Engineer*

**Jan 2020 - Feb 2022**

*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**

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#### **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**

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#### **Indiana Institute of Technology**

*Master of Science, Information Systems*

**May 2023 - Oct 2024**

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

#### **KG Reddy College of Engineering & Technology**

*Bachelor of Science, Computer Science Engineering*

**Jun 2018 - Aug 2022**

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

### **Certifications**

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- 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)