Harshwardhan Patil

Arlington, TX | work.harshwardhanpatil@gmail.com | 817-938-9288 | LinkedIn | GitHub | Portfolio

Overview

Full-Stack Engineer with 3+ years' experience designing and delivering **scalable, distributed systems** and **high-performance APIs** across frontend, backend, and cloud. Skilled in modular architectures, **production monitoring**, and CI/CD on **AWS**. Proven record of stable production releases and building systems with **fault tolerance**, **data consistency**, and robust system design principles.

Education

University of Texas at Arlington — *Master's in Software Engineering* — *May 2026*
BMS College of Engineering, India — *Bachelor's in Mechanical Engineering* — *July 2021*

Technical Skills

- **Languages & Frameworks:** Java, TypeScript, JavaScript, SQL, Python, Spring Boot, Angular, Node.js
- **Cloud & DevOps:** AWS (EC2, ECS, S3, RDS, Secret Manager), Docker, Jenkins, GitHub Actions, Nginx, CI/CD
- **Databases:** PostgreSQL, Redis, MySQL, MongoDB, Database indexing, Query optimization
- **Testing & Security:** JUnit, Jasmine, SonarQube, Postman, JWT, RBAC, HTTPS/TLS, CORS, CSRF/XSS protection
- **Design & Architecture:** System Design, Low-Level Design, Design Patterns, SOLID principles, database schema design

Professional Experience

Software Engineer, Clarivate Analytics – Bangalore, India — *Aug 2023 – Aug 2024*

- Designed scalable Spring Boot REST APIs with DTO contracts and standardized error handling, reducing breaking changes by **30%** across releases.
- Containerized and built deployment pipelines using Docker, Jenkins, and Spinnaker, supporting **50+ production releases** with **zero rollbacks**.
- Proactively identified performance bottlenecks in reporting services and optimized API and cache layers, reducing response latency by **25–35%**.
- Implemented role-based access control across backend and frontend layers, enforcing tiered and region-based data visibility for **10+ access variants**.
- Designed and implemented low-latency typeahead and autocomplete services, improving search response times by **40%** over large-scale datasets.
- Architected a highly configurable, reusable Angular table framework adopted across **3 internal teams**, reducing duplicated frontend effort by **50%**.
- Built reusable, aggregation-driven Angular chart components using D3.js, powering **15+ analytics views** for interactive reporting services.
- Developed dynamic PPT and PDF export pipelines, generating **100+ customized reports** with user-selected filters, layouts, and metadata.

Associate Software Engineer, Clarivate Analytics – Bangalore, India — *Aug 2021 – Jul 2023*

- Optimized frontend rendering and state management for data-heavy views, improving responsiveness of interactive charts and tables by **20–25%**.
- Implemented and optimized PostgreSQL schemas, queries, and indexing strategies, improving query performance by **40%** for analytics services.
- Integrated Elasticsearch into Spring Boot to provide fast, advanced queries across **millions of drug records**, reducing search latency by **30%**.
- Improved frontend performance by minimizing unnecessary re-renders and optimizing data-fetching patterns, resulting in **20% faster page loads**.
- Migrated a legacy client-side component to an Angular 13 application, rebuilding **5+ core business flows** with a modular architecture.
- Implemented secure request-handling mechanisms, including JWT authentication, CORS/CSRF protection, and input validation in **multiple services**.
- Developed reusable Angular UI components, including charts and advanced table views, reused across **multiple reporting modules** consistently.

Projects

Employee Management System — *Dec 2024 – Nov 2025*

Enterprise-grade system for managing employees, teams, projects, and access control with production-grade deployment and observability.
Tools: Spring Boot, Angular, PostgreSQL, AWS (EC2, RDS, S3, Secrets Manager), Redis, Docker, GitHub Actions, Jenkins

- Designed and built a scalable backend system for employee, project, and access management, applying **system design** principles to enforce **RBAC**, data isolation, and deployment automation.
- Implemented high-performance **REST APIs** for multi-entity services (employees, departments, projects, tasks) with pagination, filtering, and search, optimized for **scalability** and **API latency**.
- Integrated **dashboards**, **centralized logging**, and **monitoring** into backend services to ensure data consistency, traceability, and reliable operation in production environments.

Battle Arena – Real-Time Multiplayer Platform — *May 2024 – Present*

Real-time multiplayer system featuring a modular game engine, physics-based simulation, and distributed backend services.
Tools: Angular, Phaser 3, Spring Boot, Node.js, MongoDB, WebSockets, Docker, AWS

- Designed a **distributed backend architecture** for real-time multiplayer gameplay, evaluating polling vs **WebSocket-based** communication and implementing custom protocols to balance latency, consistency, and scalability.
- Architected a **modular**, terrain-aware **game engine** with clear separation between **physics simulation**, **collision constraints**, and gameplay rules, enabling extensibility without impacting core engine stability.
- Designed backend service boundaries for **authentication**, **matchmaking**, and **gameplay orchestration**, defining interaction contracts and failure-handling strategies, and integrating **centralized logging** and **monitoring** to ensure **reliability** under concurrent sessions.

AI-Powered Personal Finance Manager — *Feb 2025 – Apr 2025*

Full-stack financial data processing system integrating live banking data with analytics and secure cloud deployment.
Tools: Flask, Streamlit, Redis, Plaid API, Docker, AWS

- Designed and implemented backend **APIs** for ingesting, normalizing, and categorizing financial transactions from live banking data sources.
- Built **analytics pipelines** for expense aggregation, trend analysis, and budget evaluation, ensuring **data consistency** across user accounts.
- Developed interactive dashboards backed by **secure cloud deployment**, focusing on data isolation, access control, and operational reliability.