Manish Reddy Nandineni

Software Engineer (Backend & AI)

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SUMMARY

Backend & AI engineer (Java/Python, AWS, LLMs) who ships reliable, observable services and resolves hard performance issues (profiling, heap and garbage-collection analysis, database tuning). Stabilized Siemens Capital for a 250-concurrent-user enterprise deployment; built a multi-agent platform automating end-to-end marketing.

KEY AREAS OF EXPERTISE

Scalable Backend and Distributed Systems | Production Debugging and Performance Optimization | End-to-End System Design | AI-Powered and Agentic Systems | CI/CD & DevOps Practices | Database Management

TECH STACK

Languages: Java | Python | TypeScript | SQL | C/C++

Architectures & Concepts: Distributed Systems | Microservices | REST API Design (OpenAPI)

Frameworks & Libraries: Spring Boot | FastAPI | Node.js | Next.js

AI & Agentic Systems: Multi-Agent Orchestration (CrewAI) | RAG | LLM Integration (Gemini API, OpenAI API) Prompt Engineering | LangChain

Databases & Data Platforms: PostgreSQL | MongoDB | OracleDB | DynamoDB | Elasticsearch (AWS OpenSearch) | Redis

Cloud & DevOps: AWS (SQS | ECS | S3 | CloudWatch) | Azure | Docker | CI/CD (GitHub Actions)

Tools & Testing: Git | Linux / Unix | Performance Profilers | JUnit

Methodologies: Agile | Scrum | Test-Driven Development (TDD)

CAREER HIGHLIGHTS

- **High-Throughput AWS Pipeline:** Built and owned an end-to-end AWS document pipeline that processed 300K+ documents (5 TB) at 6 GB/hr, using a distributed, scalable architecture (ECS, SQS, S3, DynamoDB, OpenSearch) to accelerate M&A due diligence from 3 months to 2 weeks.
- **Production Multi-Agent AI System:** Led the end-to-end development of a multi-agent AI marketing system, launching the production platform (Crew AI, Gemini API, FastAPI, Next.js, AWS) to reduce campaign cycles from 2 months to <1 week and secure 4 business clients within 30 days.
- **Enterprise Scaling & Performance:** Diagnosed and fixed critical memory, database, and threading bottlenecks using Java profiling, heap dump analysis, and performance tuning, cutting simulation time from 30 hours to 10 hours (a 66% gain) and unlocking Airbus's 250-user deployment.

EXPERIENCE

AI Software Engineer | Revoint | San Diego, CA *(Remote)* May 2025 – Present

- Cut digital marketing campaign cycles from 2 months to <1 week, onboarding 4 businesses in the first month, by engineering and deploying a production multi-agent AI system (CrewAI, Gemini API) and owning the full stack (FastAPI, Next.js, AWS) to automate research, strategy, content, and QA workflows.
- Reduced M&A review timelines from 3 months to 2 weeks by designing and engineering a high-throughput AWS data pipeline (S3, SQS, ECS, OpenSearch) to process over 300,000 documents (5 TB) through indexed keyword-in-context review.
- Projected a 90% reduction in manual effort for ERP schema mapping by prototyping and benchmarking an LLM-assisted system (Gemini, FAISS) to map tens of thousands of tables with human-in-the-loop validation.

Associate Instructor | Indiana University | Bloomington, IN Jan 2025 – May 2025

- Mentored 40 students in C programming and STM32 labs, providing debugging support and system integration guidance for embedded light detection systems used in dark sky monitoring projects.

Senior Software Engineer | Siemens | Hyderabad, India Jun 2021 – Jul 2024

(Promoted from Software Engineer Intern → Software Engineer → Senior Software Engineer)

- Scaled the *Capital Manager* backend (Java, SQL), transforming simulations from 30-hour failures at <80 users to 10 hour successes at 250 concurrent users, by fixing critical memory and DB connection leaks.
- Minimized version upgrade windows from 3 days to 24 hours by enhancing the *Capital Migrate* framework, resolving multi-threading bottlenecks and introducing separate export paths to isolate incompatible data.
- Unblocked ASML's critical migration, preventing high-cost legacy product support, by diagnosing a Z-order regression in the *Capital Styling* engine and shipping a hotfix on a 10-day deadline.
- Optimized styling workarounds by 80%, engineering a query-based extension for the styling engine.

PROJECTS

GridSense [github.com/GridSense-IU/GridSense] Mar 2025 – May 2025

- Enabled predictive energy usage analysis for 1200 simulated smart meters generating 100K+ daily events by architecting and building a serverless Azure IoT pipeline using Azure Events for ingestion, Cloud Functions for processing, and PowerBI for visualization.

HoosierHub [github.com/IU-HoosierHub/server] Jan 2025 – May 2025

- Developed a social media platform for 50,000+ IU students and 1000+ clubs, engineered to support concurrent users, by architecting the complete backend (SpringBoot/MongoDB), designing the REST APIs and documentation (OpenAPI), and building the CI/CD pipeline (Docker/GitHub Actions).

DIY Portfolio [github.com/ManishReddyN/diy-portfolio] Dec 2023 – Aug 2024

- Achieved a 100/100 Realtime Experience for an open-source portfolio template (Next.js/TypeScript) and authored a comprehensive documentation that guides non-technical users from a single config file to a full Vercel deployment.

EDUCATION

M.S. in Computer Science | Indiana University | Bloomington, IN Aug 2024 – May 2026

B.Tech. in Computer Science | CMRCET | Hyderabad, India Aug 2018 – May 2022