

Mangesh Raut

Software Development Engineer | Backend, Full-Stack & Applied AI

Pune, Maharashtra, India | +91 72768 19090 | mbr63drexel@gmail.com

mangeshraut.pro | linkedin.com/in/mangeshraut71298 | github.com/mangeshraut712

Professional Summary

Software Development Engineer with an M.S. in Computer Science and 5 years of experience across backend engineering, database systems, and network automation. Develops Java/Python microservices and TypeScript applications using Spring Boot, FastAPI, React, Next.js, PostgreSQL, Redis, and AWS. Improved API response time by 30% and sprint throughput by 15%; also built agentic AI, RAG evaluation, multimodal, and real-time streaming systems.

Technical Skills

Languages: Java, Python, TypeScript, JavaScript, SQL

Backend & APIs: Spring Boot, FastAPI, Node.js, REST, Microservices, WebSockets, OpenAPI

Frontend: React, Next.js, Vite, HTML5, CSS3, Tailwind CSS

AI/ML: Agentic AI, RAG, LLM Evaluation, Vector Search, Multimodal AI, MCP/WebMCP, BM25, Speech VAD, NumPy, scikit-learn

Databases: PostgreSQL, MySQL, MongoDB, Redis, AWS RDS, Supabase

Cloud, DevOps & Testing: AWS, Docker, Terraform, GitHub Actions, Jenkins, CI/CD, JUnit, Mockito, pytest, Vitest, Playwright

Engineering: System Design, Data Structures & Algorithms, Distributed Systems, OOP, SOLID, Git, Agile/Scrum

Professional Experience

IoasiZ

Piscataway, NJ

Software Engineer

Jul 2023 -- Jul 2026

- Improved inventory API response time by 30% by implementing Redis caching and optimizing database queries.
- Refactored a legacy Java monolith into modular Spring Boot services, reducing code duplication by 20% through SOLID design principles.
- Resolved 50+ microservice defects with engineering and QA teams and expanded JUnit/Mockito coverage, contributing to a 15% increase in sprint throughput.

Aramark

Philadelphia, PA

Database Administrator Intern

Jun 2022 -- Jun 2023

- Automated AWS inventory workflows with Python, reducing manual errors by 25% across 200+ events.
- Accelerated report execution by 30% through SQL query optimization and database indexing.
- Migrated 3+ legacy databases to AWS RDS to improve scalability and reliability for high-traffic event analytics.

Harshwardhan Enterprises

Pune, India

Network Engineer

Jun 2020 -- Jun 2021

- Reduced enterprise WAN latency by 35% by provisioning Cisco ASR 9000 routers and configuring OSPF/BGP.
- Diagnosed 500+ connectivity incidents using Wireshark while maintaining 90% SLA compliance.
- Cut manual diagnostic effort by 50% by developing Python-based network monitoring scripts.

Selected Projects

Agentic Full-Stack Portfolio

Python, FastAPI, WebMCP, Cloudflare Workers

- Architected an agentic application with NDJSON streaming, 10 browser tools, edge/serverless delivery, and health monitoring.
- Established CI quality gates for 104 Vitest tests, 156 pytest tests, and 16 Playwright projects; achieved 100 Lighthouse scores.

Applied AI/ML Portfolio

Python, NumPy, WebRTC VAD, BM25, LLM/RAG Evaluation

- Built a monorepo for real-time speech detection, offline LLM/RAG evaluation, and ML algorithms implemented with NumPy.
- Achieved a 0.9569 F1 score and 19 ms p95 latency; evaluated retrieval using Recall@k, MRR, nDCG, faithfulness, latency, and cost.

HindAI

Next.js, React, TypeScript, RAG

- Developed a RAG learning platform with cited answers, vector search, and multimodal Sanskrit analysis.
- Delivered Sanskrit learning tools and personalized study flows across 66 routes, secured with Zod validation, CSP, and rate limiting.

AssistMe Virtual Assistant

React, FastAPI, WebSockets

- Created a multimodal AI workspace for voice interaction, cited research, image generation, and network diagnostics.
- Designed a React/FastAPI REST and WebSocket architecture supporting multiple LLMs and 22+ Indian languages.

Education

Drexel University

Philadelphia, PA

Master of Science in Computer Science (GPA: 3.3)

Sep 2021 -- Jun 2023

Savitribai Phule Pune University

Pune, India

Bachelor of Engineering in Computer Engineering (GPA: 3.6)

Jun 2017 -- Jun 2020

Certifications & Training

- Google: Prompt Design in Vertex AI Skill Badge; Microsoft: JavaScript Programming
- IBM: Cybersecurity Fundamentals; Data Fundamentals (SQL/NoSQL); Emerging Technology (AI)
- Cisco: Networking Basics (OSPF/BGP); CCNP Routing & Switching