

MANGESH DUDHGAONKAR PATIL

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SUMMARY

Backend software engineer with 3+ years of experience, including an internship, building Java and Spring microservices at PTC (Onshape). Delivered production AI systems serving 500,000+ queries, a migration framework for 5B+ MongoDB records, and backend features supporting 100,000+ users. Experienced in scalable APIs, distributed systems, cloud deployments, and cross-functional collaboration.

EXPERIENCE

PTC (Onshape)

Bangalore, India

Software Development Engineer

Jul 2024 - Present

- Architected sharding of 5B+ MongoDB records using Java and Spring; built a fault-tolerant, checkpoint-based migration framework with RabbitMQ events, reducing cross-region query latency by 90%.
- Revamped the Onshape App Store using Java and Spring microservices with Elasticsearch, increasing monthly application creation by 50% and improving API latency by 25%.
- Built a Python Model Context Protocol (MCP) server using FastMCP to integrate CAD development tools for Onshape's Early Visibility Program; deployed and scaled the service on Kubernetes.
- Designed and developed Onshape AI Advisor, a production retrieval-augmented generation (RAG) assistant using Java, Spring, and AWS Bedrock; served 500,000+ queries with an average user rating of 4.1/5.

PTC (Onshape)

Bangalore, India

Software Development Engineer Intern

Jul 2023 - Jun 2024

- Delivered the Recently Opened Reports feature for 100,000+ users using Spring MVC, focusing on scalability, performance, and high availability of production workflows.
- Improved backend reliability by refactoring MongoDB composite index management, upgrading the Spring HTTP client, and implementing retries; resolved 10+ enterprise customer issues and reduced failure rates.

PROJECTS

PreppingQuiz | preppingquiz.vercel.app

Angular, Spring Boot, PostgreSQL, Redis, Supabase, Google Cloud Run, Vercel

- Built and deployed a full-stack developer quiz platform with an Angular frontend on Vercel, Spring Boot backend on Google Cloud Run, PostgreSQL via Supabase, and Redis caching.
- Implemented daily Java quizzes with explained answers, streak tracking, a leaderboard, and cross-device progress sync; received 100+ quiz submissions in production.

TECHNICAL SKILLS

Languages: Java, Python, TypeScript, SQL

Backend and APIs: Spring Boot, Spring MVC, Spring AI, Microservices, REST APIs, gRPC, Kafka, RabbitMQ

AI and LLMs: Generative AI, LLMs, RAG, MCP Servers, Java MCP SDK, FastMCP, AWS Bedrock, Vector Search

AI Development Tools: GitHub Copilot CLI, Claude, Cursor, Skills, Agentic Workflows

Databases: MongoDB, PostgreSQL, Redis, Elasticsearch, Qdrant, OpenSearch

Cloud and DevOps: AWS (Bedrock, EC2, S3), Google Cloud Run, Docker, Kubernetes, Vercel, CI/CD Pipelines

Testing and Tools: JUnit, Mockito, Datadog, Kibana, Git, Linux, Supabase

ACHIEVEMENTS AND PUBLICATIONS

- LeetCode: Top 10% globally; CodeChef: 3-Star rating.
- Published research on ML-based histopathological image classification with Inderscience.

EDUCATION

Pimpri Chinchwad College of Engineering (PCCoE)

Pune, India

B.Tech in Computer Engineering

Feb 2020 - May 2024