

JAY GANDHI

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Research Profile

Work Experience

Research Engineer , Tata Consultancy Services (TCS Research) – Pune, India	2022 – present
<ul style="list-style-type: none">Led research and innovation initiatives and designed an automated workflow to decompose monoliths into domain-aligned microservices, reducing the manual analysis time by 80%.Collaborated with senior scientists, architects, and product stakeholders to design experiments, analyze and validate results, and iterate on system design for scalability and performance.Independently built a production-ready tool from scratch in Java and Python, exposing REST API and a ReactJS UI, integrated CI/CD with Jenkins.Applied graph clustering algorithms (Markov, Louvain) on an undirected weighted graph with more than 50000K edges to identify service and domain boundaries, improving decomposition quality.Integrated large-language models (LLMs) for semantic code summarization. Reduced manual code effort for domain mapping by 70%.Deployed the tool to an internal business unit for pilot rollout, collected user feedback from 7 stakeholders, and implemented enhancements to improve usability and production readiness.Delivered talks, demos, and posters at internal/external forums; authored 1 ACM paper and filed 1 patent on domain-aligned microservices decomposition.Mentored four interns, successfully guiding them through project conception to delivery.	

Skills

Programming: Java, Python, JavaScript
Frameworks and Tools: ReactJS, Springboot, ExpressJS, Git, Maven, Jenkins
Database Languages: MySQL, PostgreSQL
AI/ML: LLMs, Agentic AI, Prompt Engineering, Graph Clustering
Practices: System Design, Microservices, REST API Design, Unit Testing , Static Code Analysis, Agile

Education

Walchand Institute of Technology, Solapur , B.Tech (Computer Science and Engineering) CGPA: 9.62/10	2018 – 2022
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Publications and Patents

Microservices Identification using LLM (AISM, ASE 2025)	2025
Domain Aligned Microservices Decomposition (ISEC 2025)	2025
Method and system for identifying domain aligned microservices in enterprise applications (Patent)	2025

Awards and Achievements

- Attended and presented team's work at top tier (A*) international software engineering conference (ASE 2025)
- Received the IP Creation Award for filing the patent.
- Finalist of TCS Global TACTICS 2024, an internal conference for technical architects.
- Won the Innovation Superstar Award for the publication of research papers.

Certifications

Google Cloud Certified Generative AI Leader	2025
AWS Certified Cloud Practitioner	2023
Microsoft Certified Azure Fundamentals (AZ-900)	2022