

Prasad Patil

*Solution Architect | Cloud, AI and Microservices Architect &
Research Scholar | Patent Holder*

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Summary

- Experienced Research and Technology Professional with 15+ years in software development, applied research, and cloud transformation, currently pursuing a PhD in Machine Learning, Natural Language Processing and Quantum Computing, Cryptography.
- Proficient in GenAI-based legacy code analysis and migration, microservices architecture, and cloud-native design, with a deep focus on Microsoft Azure solutions and AI-driven transformations.
- Blend of academic rigor and industrial experience, with strong analytical, problem-solving, and technical writing skills. Holds granted patents and IEEE journal publications spanning intelligent compliance systems and quantum computing.
- Well-versed in prompt engineering and AI tools; recognized for contextual innovations in mainframe modernization using GenAI.

Experience

- 08/2023– Present **Solution Architect, MBU Apps Infra Engg. - AI.cloud Unit, Tata Consultancy Services (TCS), Nagpur, India**
- Leading research and implementation initiatives for Azure Cloud Migration lifecycle tools, integrating offerings like Cloud Console, Migration Factory Hub, and Azure Well-Architected Framework.
 - Delivering large-scale application modernization end-to-end: migrating legacy .NET and mainframe systems to modern stacks — Angular/React front-ends with .NET/Java microservices back-ends.
 - Architected solutions using GenAI for COBOL to Java migration with contextual understanding of legacy systems.
 - Designed modular, microservices-based systems following Domain-Driven Design (DDD) principles.
- 04/2019– 07/2023 **Technical Architect, ISN - Corporate Unit, TCS, Pune, India**
- Core contributor to ISN (Intelligent Services Networks) with focus on Spring Boot microservices and Azure cloud integration.
 - Played the role of product architect and development responsible for automating the life-cycle of the software development journey.
 - Transformed legacy applications to microservices using DDD; deployed robust enterprise solutions on Azure.
- 04/2014– 03/2019 **Full Stack Developer & Researcher, Ignio Project - CTO & Digitate Unit, Tata Research Development and Design Centre (TRDDC), Pune, India**
- Specialized in compliance automation for networks and operating systems; developed scalable full-stack solutions.
 - Owned the complete project development of Compliance As A Service (CaaS), from research to product/service delivery.
 - Contributed to policy definition, compliance engines, and integrations for diverse enterprise infrastructure.
- 03/2011– 03/2014 **Developer & Researcher, eTransform Project - CTO Unit, TRDDC, Pune, India**
- Built standalone Java Swing modules for migration and transformation estimations.
 - Understanding of legacy infrastructure data center migration domain.
 - Leveraged multi-threading, design patterns, and data structures to develop performance-sensitive applications.

Education

- Present **PhD Scholar in Machine Learning & Quantum Computing, Cryptography, IIIT Nagpur, Nagpur, India**
Recipient of the ACM India Anveshan Setu Fellowship - IIT Hyderabad
- 2010 **B.E. in Computer Science and Engineering, Shri Ramdeobaba Kamla Nehru Engineering College, Nagpur, India**
2nd prize in internal coding competition
- 2007 **Diploma in Computer Technology, Nagpur Polytechnic, Nagpur, India**
Gold medalist for 3 consecutive years

Skills

- Microservices Architecture, Spring Boot, Advanced Java
- Domain Driven Design and Architect
- Agentic AI, LLM Fine Tuning, Machine Learning
- Azure Infrastructure, Legacy Modernization, Cloud Migration
- Quick Learner, Critical Thinking
- Academic and Technical Research

Open-Source Projects

- 2026–Present **MindSpark — Mind-Mapping Web Platform (Creator & Maintainer)**, github.com/prasadpatil25/MindSpark
- Zero-runtime-dependency, MIT-licensed vanilla-JavaScript mind-mapping app; self-hostable in one command or run free in-browser with every map saved to the user's own private GitHub repository.
 - Engineered real-time collaboration on Cloudflare Workers and Durable Objects, with GitHub OAuth and JWT-signed, role-based access control (editor/viewer roles, revocable share links).
 - Integrated a Custom GPT that converts a natural-language topic into a structured map via a POST /api/import endpoint, returning a self-contained, shareable link.

Certifications

- NPTEL Certified: Quantum Algorithms and Cryptography
- NPTEL Certified: Machine Learning for Engineering and Science Applications
- Microsoft Certified: Azure Solutions Architect Expert (AZ-305)
- Microsoft Certified: Azure Administrator Associate (AZ-104)

Patents and Publications

- IEEE Journal Publication (IEEE TIM, 2026) – *Hybrid Quantum DOA Framework* (First Paper on Quantum Computing from IIIT Nagpur - 2026)
- IEEE Journal Publication (IEEE TETC, 2026) – *Fully Coherent Dynamic Oracle Adaptation* (Under Review)
- Indian Patent: Compliance as a Service (2024)
- US Patent: Compliance Automation Platform (2017)
- Technical Paper: Compliance as a Service (2017)

Awards and Honors

- Contextual Master: GenAI for Mainframe Modernization (2024)
- Best Performer of the Year, TCS (2021)
- 2nd Rank, Ignio Hackathon (2019)
- Special Mention, Data Privacy Day Challenge Fest (2014)
- 1st Place, Initial Learning Program Training, TCS (2011)