

MANOJ MUKHERJEE

AI Architect | Lead AI Engineer | Enterprise GenAI Platforms

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PROFESSIONAL SUMMARY

AI Architect and Lead AI Engineer with 10+ years of experience building enterprise-scale AI systems, cloud-native platforms, and high-performance web applications across BFSI, logistics, cybersecurity, and retail domains.

Specialized in Python, Agentic AI, multi-agent orchestration, enterprise RAG systems, and AI platform engineering using LangGraph, MCP, OpenAI, Claude, Vertex AI, FastAPI, Kubernetes, and Next.js.

Proven track record of leading end-to-end delivery from architecture and rapid POCs to production-scale deployments while mentoring engineering teams and driving enterprise AI adoption.

CORE SKILLS

Generative AI & Agentic AI: Agentic AI, Enterprise RAG, Multi-Agent Systems, LangChain, LangGraph, Google ADK, MCP, Prompt Engineering, Hybrid Search, Long-Term Memory

AI Platforms & Models: OpenAI, Claude, AWS Bedrock, Vertex AI, Ollama, DeepSeek, LLaMA, vLLM, NVIDIA Run:AI

Backend & APIs: Python (FastAPI), Node.js, REST APIs, GraphQL, WebSockets, Microservices

Frontend: React.js, Next.js, TypeScript, Redux, TailwindCSS

Databases & Retrieval: PostgreSQL, MongoDB, pgvector, Pinecone, ChromaDB, Vector Search

Cloud & DevOps: AWS, GCP, Docker, Kubernetes, OpenShift, GitHub Actions, Jenkins, CI/CD

Leadership & Architecture: AI Solution Architecture, Engineering Leadership, System Design, Stakeholder Management, Technical Mentorship

PROFESSIONAL EXPERIENCE

PUBLICIS SAPIENT | Bengaluru, India

AI Architect / Technical Lead | Mar 2023 – Present

- Architected and led the development of enterprise-grade Agentic RAG platforms, catering to complex BFSI requirements and large-scale enterprise stakeholders.
- Designed and implemented multi-agent orchestration systems using Python, LangGraph, integrating Model Context Protocol (MCP) to enable seamless tool usage and external data access.
- Optimized information retrieval by building hybrid pipelines utilizing pgvector and MongoDB, resulting in a significant uplift in contextual relevance and precision for generative responses.
- Developed AI microservices using FastAPI and containerized Python Based deployments
- Built AI-first applications using Next.js, TypeScript, and AI SDKs
- Deployed scalable AI workloads on Kubernetes, OpenShift AI, and NVIDIA Run:AI
- Led architecture discussions with stakeholders and leadership teams
- Mentored engineers on AI engineering and platform adoption

Impact

- Reduced manual workflows by 40%+ using AI-driven automation
- Accelerated POC-to-production lifecycle by nearly 2x
- Established reusable AI platform patterns across projects

Recognition

- FS WEST SUPERNOVA Award
- Spot Award for AI Innovation and Mentoring

KOTAK MAHINDRA BANK | Bengaluru, India

Chief Manager (SDE III) | Sep 2022 – Feb 2023

- Worked on the Kotak811 digital banking platform
- Contributed to fraud detection and banking compliance initiatives
- Participated in UPI 2.0 integration discussions
- Guided external engineering vendors on frontend architecture
- Collaborated with product, backend, and security teams

A.P. MOLLER – MAERSK | Bengaluru, India

Software Engineer III | Aug 2021 – Aug 2022

- Built scalable frontend and microfrontend systems using React and Next.js
- Established Module Federation architecture improves performance by 30%
- Implemented SSR improving performance by 25–30%
- Developed reusable engineering tooling and utilities
- Mentored engineers on frontend best practices

Achievement

- Maersk Star Award

KRISTA SOFTWARE | Pune, India

Senior Software Engineer / Founding Engineer | Jun 2020 – Jul 2021

- Contributed as a founding engineer for an AI-driven automation platform
- Built cross-platform mobile and web applications
- Led development initiatives and engineering reviews
- Contributed to architecture and scalability discussions

Achievement

- Krista Excellence Award

OPTIV INC | Bengaluru, India

Software Engineer | Jun 2019 – Jun 2020

- Developed enterprise platforms using React.js, GraphQL, Node.js, and MongoDB
- Built analytics dashboards and backend APIs
- Improved frontend performance and scalability
- Contributed to CI/CD and production support

HEWLETT PACKARD ENTERPRISE | Bengaluru, India

Software Engineer I Dec 2018 – Jun 2019

- Built React.js and Redux-based hybrid cloud interfaces
- Contributed to OpenSphere and GreenLake frontend systems
- Worked alongside distributed systems and Golang microservices teams

WILLIAM O'NEIL INDIA | Bengaluru, India

Software Engineer | Jul 2016 – Dec 2018

- Worked on Panaray financial analytics platform
- Built scalable React.js applications and Node.js services
- Established frontend architecture and engineering standards
- Mentored junior engineers and contributed to CI/CD best practices

Achievement

- Excellence Award for Rapid Delivery
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KEY AI PROJECTS

Enterprise Agentic RAG Platform

- Designed enterprise multi-agent AI architecture for BFSI workflows
- Implemented hybrid retrieval, memory pipelines, and contextual reasoning
- Improved retrieval relevance and AI response quality
- Deployed scalable AI infrastructure on Kubernetes

AI Agent Platform (LangGraph + MCP)

- Built real-time AI agents with tool orchestration
- Enabled workflow automation and multi-step reasoning
- Reduced manual intervention through AI-driven operations

Vision AI & OCR Systems

- Built AI systems integrating OCR, Vision AI, and LLMs
 - Enabled intelligent extraction and contextual understanding from documents
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PUBLICATIONS

- Agent-to-Agent Communication Systems
- Advanced Retrieval-Augmented Generation (RAG)
- Real-Time AI Agents with LangChain & LangGraph
- AI + OCR + Vision Systems
- AI-Powered Stock Analysis using LangGraph & DeepSeek

Medium: medium.com/@manojmukherjee777

EDUCATION

Master of Computer Applications (MCA)

Visvesvaraya Technological University | 2013 – 2016 | 80%

Bachelor of Computer Applications (Honours)

University of Burdwan | 2010 – 2013 | 76%

ACHIEVEMENTS

- GenAI Hackathon Semifinalist – ASPIRE SPEED
- FS WEST SUPERNOVA Award
- Maersk Star Award
- Krista Excellence Award
- University 3rd Rank Holder (BCA)

ADDITIONAL INFORMATION

Languages: English, Hindi, Bengali

Areas of Interest:

- Enterprise AI Architecture,
- AI Platform Engineering,
- Multi-Agent Systems,
- Engineering Leadership,
- Cloud-Native AI Systems