

Prateek Deshmukh

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Education

SRM Institute of Science and Technology, Kattankulathur
B.Tech Artificial Intelligence

2023-2027
CGPA: 9.04/10

Skills

Programming: Python, TypeScript, Java, SQL **Frameworks:** FastAPI, React, Next.js, Node.js, LangGraph, Pydantic, Spring Boot **Infrastructure:** PostgreSQL, Redis, RabbitMQ, SQLite, Docker, Linux, AWS, GCP, Cloudflare **AI/Systems:** Agentic Systems, Harness Engineering, MCP, RAG, Webhooks, REST APIs, Microservices

Experience

- **Engineering Intern, NatWest Group** June 2026 - Aug 2026
 - Spearheaded the migration of Synapse, NatWest's internal agentic orchestration layer, from an in-memory vector store to **PostgreSQL + pgvector**, enabling scalable, persistent semantic retrieval across enterprise AI workflows.
 - Replaced Spring AI's default vector retrieval with a **custom hybrid search pipeline** combining PostgreSQL full-text search (**tsvector**) and BM25 ranking, improving enterprise knowledge retrieval quality.
 - Integrated Synapse with **AWS Agent Registry** to enable runtime discovery and routing of specialized AI agents across enterprise domains.
 - Built components of the **Capability Registry**, a centralized catalog of enterprise APIs and resources that enables Synapse to plan and orchestrate multi-step workflows autonomously.
- **AI Engineer, Together Fund** Apr 2026 – Jun 2026
 - Built an autonomous talent intelligence pipeline that ingested, enriched, and retrieved information for **2,000+ contacts** from LinkedIn, GitHub, and personal websites using the **Anthropic Agents SDK**, eliminating manual data collection and improving profile completeness by 40–60%.
 - Engineered a graph-based relationship intelligence platform that models the fund's network and identifies the shortest introduction path to founders, operators, and investors.
- **AI Engineer, Faff** Sep 2025 – Mar 2026
 - Rebuilt the unacknowledged-message detection pipeline (**Unack v2**), reducing detection latency from **~2 minutes to under 200 ms** (~600× faster).
 - Developed internal finance infrastructure to reconcile **thousands of weekly vendor payouts** against customer wallets with per-employee attribution, streamlining reimbursement workflows.
 - Shipped customer-facing AI agents using **LangGraph** to automate end-to-end support ticket resolution, integrated directly with the company's internal platform.
 - Led the migration from **Razorpay** to **Cashfree**, implementing secure payment processing, webhook validation, and automated GST invoice generation through Zoho.
 - Integrated **Vapi** voice agents with Google Maps APIs for vendor outreach, improving multilingual communication accuracy by **25%**.

Projects

- **Backademia: MCP Server** (Python, FastAPI, SQLite)
 - Built a **Model Context Protocol (MCP)** server exposing attendance, grades and timetable data from a reverse-engineered university portal as tools for LLMs.
- **Hooked: Webhook Debugging Utility** (Python)
 - Built a CLI utility for inspecting and filtering webhook payloads in real time, reducing debugging time by ~50% during production payment gateway integrations.
- **Yaaru: Multiplayer Party Game** (TypeScript, Python)
 - Built and deployed a real-time multiplayer party game with a custom connection manager for concurrent player synchronization.

Achievements

- Awarded 'Most Creative Project' at Epoch Hackathon in Delhi for innovative project design and development.
- Won 1st prize in CodeDay Bengaluru hackathon.