

Upayan Ghosh

Backend Engineer | Applied AI Systems | Claude Certified Architect (Anthropic) | Open to Remote
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Summary

Backend engineer (~2 years, Accenture) building LLM tooling over enterprise SQL Server data with Claude API and MCP, and shipping self-hosted Python/FastAPI agent infrastructure: hybrid RAG, vector search, and multi-provider LLM routing.

Technical Skills

AI / GenAI: hybrid RAG, embeddings, vector search, LanceDB, sqlite-vec, `litellm`, Claude API, LLM routing, agent orchestration, MCP

Languages & Frameworks: Python, FastAPI, Pydantic, asyncio, TypeScript, C#, ASP.NET Core, Angular, SQL/T-SQL, REST APIs, async queues

Databases & DevOps: SQLite (FTS5, sqlite-vec, WAL), PostgreSQL, SQL Server (stored procedures), Docker, GitHub Actions, Azure DevOps CI/CD, AWS Lambda, pytest

Experience

Associate Software Engineer

Oct 2024 – Present

Accenture

Kolkata, India

- Made a **2,300-table** production database self-service for 5+ engineers by building a Claude agent over MCP with read-only guardrails and credential isolation, cutting routine investigation from hours to minutes.
- Documented **2,342 tables and 3,395 stored procedures** across two production databases with a dependency-free Python pipeline that chunks schema for LLM analysis and merges curated, AI, and rule-based explanations into a provenance-tagged searchable wiki.
- Root-caused silent access loss to identity keyed on a mutable alias rather than the immutable person-record key — proving with read-only SQL that 48 users held duplicate accounts and **14% of 30k active accounts** were stale — then caught two defects in the fix pre-release, including a repository call that would have persisted nothing.
- Cleared a **Critical**-severity defect by tracing a stalled lock-execution job to a mid-transaction SQL deadlock that left an orphaned request record blocking every later lock attempt, disproving the reported data/location theory.
- Closed high-severity dependency vulnerabilities across 8 .NET and Node.js Lambda services over **19 merged pull requests**, upgrading vulnerable serialization, regex, and HTTP packages (e.g. Newtonsoft.Json 9.0.1 → 13.0.1) and owning the release cycle.

Projects

Synapse: Multi-Channel Personal AI Agent Platform | *Python, FastAPI, LanceDB, sqlite-vec, litellm, asyncio* 2025 – Present

- Served retrieval at **P50 243 ms / P95 327 ms** across 200 live-corpus queries by architecting a self-hosted 4-channel agent platform (WhatsApp, Telegram, Discord, Slack) with hybrid RAG over LanceDB, sqlite-vec, and SQLite FTS plus reranking.
- Sustained **100% delivery** through a 500-message burst by building 6-provider LLM routing with fallback chains, async message processing, deduplication, bounded queues, and observability with PII redaction.
- Made the knowledge graph durable across restarts and bounded by disk rather than process memory by replacing in-memory NetworkX with a SQLite triple store, cutting peak RAM **99.2% (tracemalloc)**.
- Maintain as public OSS: **2** outside contributors, **14** GitHub stars, 9 MCP server modules, 836 commits.

tldr skill: Repo to Onboarding Site Generator | *Python, Claude API, Cytoscape.js, D3.js*

2026

- Generated offline developer-onboarding sites for repos up to **5,000+ files** across 15 languages by publishing a Claude Code skill to npm that emits dependency graphs, directory maps, Mermaid diagrams, and framework-specific cookbook recipes.
- Cut inference cost **85%** by combining 7 pure-Python static-analysis passes with parallel Haiku workers and a final Sonnet synthesis step under a strict 3,500-token budget; **1,000+** npm downloads.

claude jarvis: Universal Intent Router | *TypeScript, Claude Code Plugin API*

2026

- Reached **2,690 npm downloads** and **18** GitHub stars in its first year by publishing a Claude Code skill that routes natural-language intents across installed skills using fast-path matching and dynamic **SKILL.md** discovery.

Education & Certifications

B.Tech, Computer Science & Engineering — Techno International New Town, Kolkata (2020–2024)

Certifications: Claude Certified Architect – Foundations (Anthropic), Reinvention with Agentic AI (Accenture)