

Swapnanil Chakraborty

Software Engineer | Backend, Frontend, Artificial Intelligence (AI) and Distributed Systems

Kolkata, India | +91 76795 99489 | +91 76790 15958 | swapnanilmwq@gmail.com

linkedin.com/in/swapnanil-chakraborty | github.com/swapnanil1

PROFESSIONAL SUMMARY

TypeScript-focused Software Engineer with a B.Tech in Computer Science and one year of experience, leading a four-person squad while owning frontend, backend and Artificial Intelligence (AI) subsystems in production. Came in through frontend and still ships it; added backend, distributed systems and AI engineering, and now owns a multi-tenant Business-to-Business (B2B) AI product end to end, from PostgreSQL schema and RESTful application programming interface (API) design through Large Language Model (LLM) integration to the React editing surface and public page. Strengths in React and TypeScript user interface engineering, database concurrency control, system design, cost optimization, root cause analysis, automated testing and mentoring.

PROFESSIONAL EXPERIENCE

Software Engineer

DeepThought CultureTech Ventures, Hyderabad, India (Remote)

Dec 2025 - Present

- Built and own the outbound sales platform in daily production use across an 18-person sales organisation, including a 10-person telecalling floor placing roughly 400 calls per day; over 10,000 calls have been logged, recorded, transcribed and AI-scored through the system to date. Covers the dialler and call queues, dispositions, recording ingestion, automated escalation with weekly key performance indicator (KPI) adjudication, and bulk contact import.
- Designated team lead for a four-person squad (one engineer, three engineering interns) alongside a full individual-contributor load: scoping and assigning work, reporting priorities and status to stakeholders, onboarding interns, unblocking daily technical queries, and authoring the team's conventions for code review, schema-migration discipline and verification of AI-generated code before merge.
- Own an AI-generated prospect-intelligence product end to end: 9 PostgreSQL data models, the multi-step LLM generation runner, document versioning, publishing layer and a passcode-gated public page with engagement analytics.
- Built the product's editing studio and public page in Next.js 16, React 19 and strict TypeScript: a contentEditable editor primitive that keeps the browser caret through React re-renders (a 1,565-line structured editor and a 1,948-line detail surface, both 100% mine by blame), a public-page engagement beacon with per-section dwell tracking that discounts hidden tabs and flushes over sendBeacon on unload, and a typed service and hook layer for seven CRM domains.
- Integrated Anthropic Claude, OpenAI and Google Gemini behind one shared configuration interface, with live model discovery, provider-bound keys and key-health checks; wrote the platform's secret-encryption module (AES-256-GCM, per-encryption initialization vector, authentication-tag verification) so no key material is returned in any API response.
- Built AI cost governance: a 56-model pricing table with longest-prefix matching (unknown models return no price, never a wrong one), per-generation token accounting in two currencies, and request-rate ceilings extended to background workers, so a ceiling hit releases the job instead of burning its retry budget.
- Engineered long-running AI generation as a crash-safe distributed job (atomic claim, ownership token, progress heartbeat, 20-minute stale-run reclamation) so runs survive gateway timeouts and worker crashes, and built the recording pipeline on Google Cloud service accounts with automated folder provisioning and call matching that abstains to human review on ambiguity rather than guessing.
- Diagnosed and closed a check-then-insert race condition with PostgreSQL concurrency control (SELECT FOR UPDATE SKIP LOCKED row locking, compare-and-swap updates, a partial unique index), and built weekly KPI adjudication whose timezone- and Daylight Saving Time-safe boundaries return identical results across three server timezones.
- Authored 36 Mocha test suites (6,037 lines) covering scheduling, escalation and recording subsystems; delivered 183 commits and 37 database migrations into a 31,800-commit production codebase with zero reverts.

Web Development Intern

EazyByts Web Solutions (Remote)

Oct 2025 - Nov 2025

- Built and deployed StockPils, a virtual stock-trading platform (TypeScript, React, Express, MongoDB, Finnhub API) with JSON Web Token (JWT) authentication, a transaction ledger and a portfolio dashboard computing average cost basis and real-time profit and loss; migrated the working JavaScript frontend to TypeScript mid-project to strengthen type safety.

TECHNICAL SKILLS

Programming Languages: TypeScript, JavaScript (ES2023), Python, Go, SQL, Bash

Backend and Distributed Systems: Node.js, Express, RESTful API design, distributed job orchestration, idempotency, retries and exponential backoff, rate limiting, background workers, caching

Databases: PostgreSQL, Prisma Object-Relational Mapper (ORM), MongoDB, Supabase, Redis, schema design, migrations, indexing, transactions, concurrency control, query tuning

Artificial Intelligence: Large Language Model (LLM) application engineering, Anthropic Claude, OpenAI and Google Gemini APIs, prompt engineering, retrieval-augmented generation over structured sources, structured output validation, token accounting and cost optimization, agentic AI coding workflows (Claude Code, Codex)

Frontend: React 19, Next.js 16 (App Router), TypeScript (strict mode), TanStack Query, Zod, Tailwind CSS, react-hook-form, DOM APIs (contentEditable, IntersectionObserver, sendBeacon), DOMPurify, Socket.IO client

Infrastructure and Tools: Linux server administration, DigitalOcean (VPS provisioning, SSH, service management), nginx (reverse proxy, TLS), Bash, Git, GitHub, Render, Google Cloud service accounts, Google Workspace APIs, ffmpeg

EDUCATION

Bachelor of Technology (B.Tech), Computer Science

University of Engineering and Management, Kolkata, India

2020 - 2024

CGPA: 8.51/10

Continuing Education: The Odin Project - approximately 20 completed full-stack JavaScript projects, 2023-2025, all public on GitHub. Self-directed study in JavaScript, TypeScript, React, Node.js and databases.