

DEEPANSHU

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EDUCATION

Indian Institute of Technology, Jodhpur

Aug. 2023 – Apr. 2027 (Expected)

B.Tech. in Computer Science and Engineering — CGPA: 9.17/10

Jodhpur, India

- Coursework:** Data Structures & Algorithms, Operating Systems, Databases, Computer Networks, Distributed Systems, Object-Oriented Programming, Software Engineering, Machine Learning.

EXPERIENCE

123OfAI

May 2026 – Jul. 2026

Software Engineer Intern

Bangalore, India

- Built a server-authoritative contest platform (**Express/TypeScript, Redis, Azure Table/Blob**) that graded untrusted user code in isolated sandboxes against server-held hidden tests, keeping test cases and answers off the client entirely.
- Cut leaderboard ranking from **O(N)** full-scan aggregation to **O(log N)** Redis sorted-set updates; made grading writes **idempotent** so duplicate submissions and Redis outages degraded to the durable store instead of corrupting scores.
- Shipped an ML system-design studio (**Next.js 14, React Flow, Azure OpenAI**) where deterministic rule checks gate LLM rubric evaluation across 6 segments; code-splitting with SSG + ISR held **first-load JS at 96 KB** over 220+ pages.

Decklar

May 2025 – Jul. 2025

Software Engineer Intern

Ahmedabad, India

- Sole engineer** on a **GPS-free**, spoof-resistant proof-of-delivery engine (**Python, pandas, NumPy**) that verifies deliveries from ambient Wi-Fi scans alone — **95% verdict accuracy** on ground-truth runs, **live in production** in Germany.
- Reconstructed routes by filtering unstable access points, matching every surviving AP to its **nearest-RSSI reference points** in a **multi-year wardrive database** and centroiding them into a fix, then clustering the track into dwell-scored stops.
- Designed the **4-verdict confidence-scored output contract** and shipped the customer-facing feature (**React 19, TypeScript, FastAPI, Leaflet**): a route/date picker that runs the engine **on demand** and plots the agent's track with color-coded stops.

PROJECTS

PRQLite | C++17, Relational Database Engine from Scratch | GitHub

Mar. 2025

- Built a SQL storage engine from first principles: **slotted-page** record layout, a **buffer pool manager** with pin-count eviction, and RAIL page guards over a reader-writer page table for safe concurrent access.
- Implemented the full **4-stage** query path — lexer → recursive-descent parser → semantic analyzer → **Volcano-style iterator executor** — with **write-ahead logging** and BEGIN/COMMIT/ROLLBACK transactions backed by undo-based rollback.
- Hand-wrote every layer — from the character-level SQL scanner down to the `pwrite()` syscall — in **~4,500** lines of C++17 with no parser generator (no lex/yacc/ANTLR), shipped via CMake + GitHub Actions CI as a Docker image with a persistent volume.

LOCKSTEP | TypeScript, gRPC, Raft Consensus | GitHub

Nov. 2024

- Architected a fault-tolerant distributed key-value store on the **Raft** consensus protocol — leader election, log replication, and automatic repair of divergent follower logs after node failures.
- Committed entries by quorum through a replicated state machine; a **ports-and-adapters** core ran consensus over both **gRPC (Protocol Buffers)** and in-memory transports, letting a **21-case** Jest suite fault-inject leader crashes mid-replication and assert log convergence.

Enterprise Production & Order Management System | React, Node.js | GitHub

Feb. 2026

- Automated InduBindu's made-to-order manufacturing workflow with a full-stack ERP portal, processing **1000+ daily orders** and fully replacing manual Excel-based tracking.
- Integrated **3** external systems — real-time **Shopify webhooks**, **2** courier APIs (Shippo, Delhivery), and barcode-based tracking — behind role-based dashboards.

TECHNICAL SKILLS

Languages: C++, Python, TypeScript, JavaScript, SQL

Backend & Systems: Node.js, Express, REST, gRPC / Protocol Buffers, WebSockets, Webhooks, Multithreading

Data & Infrastructure: PostgreSQL, Redis, Azure (Blob, Table, OpenAI), Docker, Linux, CI/CD (GitHub Actions)

Frontend: React.js, Next.js, React Flow, Leaflet, Vite, HTML/CSS, Tailwind

Libraries & Tools: Git/GitHub, Jest, pytest, Postman, pandas, NumPy, scikit-learn

Concepts: Data Structures & Algorithms, Distributed Consensus, Concurrency, Database Internals, System Design

POSITIONS OF RESPONSIBILITY

Overall Coordinator, Career Development Cell

May 2026 – Present

Indian Institute of Technology, Jodhpur

Jodhpur, India

Teaching Assistant, Data Structures & Algorithms

Aug. 2025 – Nov. 2025

Indian Institute of Technology, Jodhpur

Jodhpur, India