Aditya Dutt Pandey

Backend & Infrastructure Engineer

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I build backend systems and run them in production. I wrote the first version of tunyt and own its architecture; it serves **485K requests a week at 59 ms**. I measure before I change anything.

Education

Lovely Professional University · B.Tech, Computer Science (AI & ML) · CGPA 8.39 — 2024 – 2028

Experience

tunyt · Co-Founder & CTO · tunyt.com — Dec 2025 – Present

Events platform where AI agents run booking, ticketing, vendors and the run of show. TypeScript, PostgreSQL, Redis.

- Built the first version solo (agents, real-time backend, UI). Now own the architecture and hiring, and lead a team of five across mobile, web, AI infrastructure and design.
- Scaled weekly requests **7×** (69K → 485K, Jun–Aug 2026) while cutting latency **110 → 59 ms** and errors **2.84% → 0.32%**, by instrumenting every route first and fixing what the data showed.
- Kept PostgreSQL healthy through that growth: separate connection pools for API and workers, a per-request query budget, shared results for identical expensive reads, and daily analytics rollups.
- Made schema changes safe on a 90+-table production database by moving from ORM-generated to reviewed raw-SQL migrations.
- Cut deploy time from 20+ min to under 9 with Docker layer caching, parallel CI jobs and model weights baked into the base image.
- Publish postmortems for production incidents, e.g. a CI-green cleanup that overloaded a node.

Pokus · Software Development Intern — Jan 2026 – Feb 2026

- Built production backend pipelines for an AI agent that books, orders food and makes calls for users, and owned CI/CD for the Flutter app's releases.

Lovely Professional University · Research Intern — Jun 2026 – Jul 2026

- Two patent applications filed (hardware-anchored attestation for AI agent decisions; cognitive-emotional adaptive intervention) and two research papers co-authored.

Projects

Tixin, the ticketing pilot that became tunyt · write-up — 2025

- CQRS ticketing that splits bookings (Kafka) from browsing (Redis) so sales spikes never hit reads. Ran on a Kubernetes cluster I built on two Raspberry Pi 5s and held 16K+ req/s at 1,000 connections in a load test.

zerd, a coding agent that proves its work · zerd.si · GitHub — 2026

- Live at **zerd.si** as a single Rust binary with one-line installers for macOS, Linux and Windows. I use it daily on tunyt; it also did Veris's contract migration to Base.
- Before calling a task done it runs the repo's checks on changed files, reruns them on the pre-change tree to separate old failures from new ones, has a second model review the diff while a verifier tries to disprove each finding, and checks every cited file:line on disk.

Speculative RAG, voice Q&A in four Indian languages · GitHub — 2026

- Answers spoken questions in Hindi, English, Tamil and Urdu in 20–30 ms on a 512 MB server with no LLM on the request path (Sarvam STT → BM25 on Qdrant → extractive answer).

More at lab.adpandey.dev: Rebuilt (Redis, a load balancer and an x86 OS from scratch); Veris (hardware-signed photos); PHANTOM (multi-agent RL for AI security).

Achievements & Community

- **Google Solution Challenge 2026:** Top 14 of 85,000+ registered teams, with Veris.
- **11+ hackathon wins**, including LPU InnoTek 9th Innovation Expo (1st, Student Incubation, Apr 2026), Xpecto'26 IIT Mandi (1st, Brand Wars, Mar 2026), Syntechs 2026 by CodeChef × Kreo (Jan 2026) and IIT BHU.
- **Teaching:** backend and DevOps to 100+ students at Learner's Arc; guest lectures on system design; open-source mentor, GSSoC 2025.
- **Writing:** 24 engineering write-ups on scaling, incidents and agents at lab.adpandey.dev/writing.

Skills

Strongest	TypeScript, Node.js, PostgreSQL, Redis, Docker
Also shipped	Python, Rust, Go, Kafka, Kubernetes, GitHub Actions, Prometheus, Grafana, Nginx
Familiar	MongoDB, gRPC, Qdrant, FastAPI