Aditya Dutt Pandey

Hardware Security & Systems Engineer

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I build systems where hardware and software have to trust each other. **Veris** signs every photo in a TPM and proves it on-chain in under a second, and the idea behind it is now a filed patent application.

Education

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

Projects

Veris, a camera that proves its photos are real · veris.live · GitHub — 2026

- Signs each photo at capture with a TPM-held key; a Groth16 proof anchors the signature on-chain (ERC-1155) and the evidence goes to Filecoin and IPFS. Shutter to verifiable proof in under a second.
- Prototyped as a phone clip, a hot-shoe module and a standalone camera. Moving minting to Base with contract optimisation cut cost per mint 97% (₹13.55 → ₹0.34).
- **Top 14 of 85,000+ registered teams** at Google Solution Challenge 2026; winner of Syntechs 2026 (CodeChef × Kreo).
- The same hardware-signing idea, applied to AI agent decisions, is now a filed patent application.

Sukku, an on-device emotion-reading robot — 2026

- A custom multimodal model fuses vision, audio and context to estimate a person's state, fully on-device on Raspberry Pi 5 and ESP32 with no cloud API, and remembers users across sessions.

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.

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

Experience

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.

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.

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.

Achievements & Community

- **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	TPM signing, Raspberry Pi, TypeScript, PostgreSQL, Docker
Also shipped	Groth16, Ethereum, Base, ERC-1155, Filecoin, IPFS, ESP32, Python, Kubernetes
Familiar	Rust, Go, PyTorch