

# SHAURYA PUNJ

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## Experience

### Inewvative Technologies — CTO, Product & AI Lead

- Led a 7-member team shipping an autonomous solar inspection stack with aerial vision AI.
- Architected closed-loop pipelines linking aerial imagery, base stations, and actuation.
- Delivered **60% water cut** and **26% efficiency gain**; pre-incubated at ISB Venture Labs.
- Finalist at *HDFC Student-Led Startups* and *Smart Ideathon*; praised by ISB mentors.

### Thapar Institute of Engineering and Technology — Project Lead

- Directed a **₹1 Lakh-funded** research program on non-invasive ML glucose monitoring.
- Designed RF antenna systems for breast tumor detection and biomedical signal acquisition.
- Achieved **95% accuracy** on **10,000+** S-parameter samples with sub-second live feedback.

## Projects

### NeuraMed — Clinical AI Diagnostic Intelligence Platform

Live · GitHub

- Designed three clinical AI agents (voice, imaging, OCR) on FastAPI + LLaMA 3 70B at **<3s**.
- Integrated ICD-10 diagnosis and ACR imaging across **8+ Indian languages** at **92%** confidence.
- Deployed PBKDF2 auth, PostgreSQL, and WebSocket feeds across all **3** specialized agents.
- Shipped to production on Vercel + Render; targeting India's **800M** underserved patients.

### Relict — Reproducible eDNA Biodiversity Platform

GitHub

- Architected an 8-stage eDNA pipeline from raw FASTQ to GBIF-ready Darwin Core Archives.
- Engineered SHA-256 signed manifests pinning tool versions for byte-level reproducibility.
- Built a **2.4M-sequence** reference index (SILVA + MIDORI2) assigning taxonomy in **<90s**.
- Validated on a **45,204-read** SRA dataset: **51 ASVs** at **100%** taxonomy in **3.6 minutes**.

### NyayaSetu — Offline-First AI Governance Platform

GitHub

- Spearheaded an Ollama multi-agent stack (Qwen2.5-14B + Sarvam) for **833M** rural Indians.
- Automated grievance triage across **8+ departments** with RAG+FAISS at **0.89 precision**.
- Scaled an Electron + FastAPI + SQLite stack supporting Hindi, English, and Hinglish voice.
- Optimized in-memory caching for a **280x** speedup; zero internet required for inference.

## Skills

**Languages:** Python, TypeScript, JavaScript, C/C++, SQL, Bash

**Frontier AI:** LLMs (Qwen2.5, LLaMA 3, Sarvam), RAG, FAISS, Ollama, agentic orchestration

**ML & Data:** PyTorch, TensorFlow, Scikit-learn, NumPy, Pandas, YOLO, OpenCV, scikit-bio

**Full-Stack:** React, Next.js, Node.js, FastAPI, Flask, PostgreSQL, MongoDB, SQLite, Redis

**Tools & Product:** Docker, Git, CI/CD, Linux, Vercel, Render, MVPs, end-to-end ownership

## Education

### Thapar Institute of Engineering and Technology

B.Tech in Electronics & Communication Engineering

Minor in Computer Science

2023 – 2027

CGPA: 8.47 / 10

## Achievements & Certifications

- Meta PyTorch OpenEnv Hackathon — Grand Finalist:** Top 1% of **52,000+** devs at Scaler Bangalore.
- Google The Big Code 2026 — Top 1,500 of 15,000;** advanced to Round 2 of flagship contest.
- IEEE EAIC 2025 — Two Accepted Papers:** glucose monitoring (oral), breast tumor (poster).
- Patent Under Review —** non-invasive blood glucose monitoring via microwave ML regression.
- International Hackathon Winner —** Agentic AI; **Qualcomm Edge AI Finalist —** SolarSage.
- TIET Merit Scholarship —** Top 10% of cohort; **₹1 Lakh** biomedical AI funding.