

PUNYA PATEL

Computer Engineering Student & AI Systems Architect

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Final-year Computer Engineering student, full-stack developer, and AI systems architect with a robust portfolio spanning multi-agent AI hubs, consumer-facing mobile applications, and high-fidelity e-commerce platforms. Combines deep technical proficiency in modern frameworks (Next.js, Python, React, Android) with real-world entrepreneurial experience managing manufacturing operations and end-to-end client software deliverables.

EDUCATION

IndusUniversity | Ahmedabad, India

Expected May 2026

B.Tech in Computer Engineering

• **Relevant Coursework:** Compiler Design, Cryptography, Software Engineering, Data Science.

WORK EXPERIENCE

Machine Learning Intern | AcmeGrade

Jun 2024 – Aug 2024

- Completed a specialized, two-month intensive internship focused on core Machine Learning concepts.
- Applied Exploratory Data Analysis (EDA) and dataset preprocessing techniques to optimize machine learning model training workflows.
- Concurrently completed specialized Machine Learning training in collaboration with Mood Indigo, IIT Bombay.

TECHNICAL SKILLS

Languages:	Python, Java (OOP), C++, C, JavaScript, TypeScript, SQL, Solidity
AI & Machine Learning:	PyTorch, OpenAI Whisper, Pyannote, Computer Vision, OpenCV, Multi-Agent Systems, RAG Pipelines, EDA
Frontend & Web:	Next.js (App Router), React, HTML/CSS, Tailwind CSS, Framer Motion, WebGL
Backend & Cloud:	Node.js, FastAPI, Express, Prisma ORM, REST APIs, Vercel, Shopify Backend
Mobile & Edge:	Android Studio, IoT Protocols (MQTT)
Infrastructure:	ChromaDB, SQLite, Git, GitHub, CI/CD Pipelines

PROJECT PORTFOLIO

Artificial Intelligence & Data Engineering

Elementa (Enterprise Multi-Agent AI System)

Python, FastAPI, ChromaDB, LLMs

- Architected a local-first, hybrid multi-agent hub for a diversified business portfolio to manage data silos and ensure data sovereignty.
- Integrated ChromaDB for local vector storage, securely routing textual fragments to cloud-based AI models for advanced reasoning and orchestration.

Briefify (AI Meeting Insights)

PyTorch, OpenAI Whisper, Pyannote, Next.js

- Developed a local-first meeting transcription application using OpenAI Whisper for high-accuracy text generation and Pyannote.audio for speaker diarization.
- Implemented local LLM inference via LM Studio with cloud fallback to extract actionable items and generate summaries.

Synapse (Polyglot AI Agent SDK)

Python, TypeScript, Node.js

- Built a lightweight SDK providing AI agents with instant access to 25+ production-ready skills via dual handlers.
- Designed a dynamic loading mechanism utilizing universal JSON schemas, ensuring automatic compatibility with OpenAI and Anthropic formats.

Face Detection System

Python, OpenCV

- Designed and trained a computer vision model using Python and OpenCV, leveraging EDA to detect facial features accurately.
- Implemented efficient image processing algorithms with Haar Cascades to maintain high frame rates during live detection.

Full-Stack Web & Mobile Development

EcoSphere (Hackathon Project)

Next.js, Node.js, Express, Prisma, SQLite

- Collaborated in a 4-person team to build an enterprise-grade Environmental, Social, and Governance (ESG) dashboard.
- Led the Platform Settings & Configuration architecture, engineering the backend logic for dynamic ESG scoring weights and user notifications.

Moodify (Practical File Generator)

Next.js, React, Node.js, Vercel

- Engineered a full-stack web application with automated CI/CD pipelines to help university students instantly generate and format practical file PDFs.
- Designed a dynamic document creation engine that parses code, aims, and outputs into structured layouts.

Celestia (Luxury E-Commerce Storefront)

Next.js, Tailwind CSS, Framer Motion, Shopify

- Developed a premium, high-fidelity e-commerce platform for fine jewelry featuring a "Liquid Glass" UI pattern.
- Engineered a password-gated admin inventory controller, interactive size calculator, and complex cart state management.

Lucid (3D Interactive PDF Reader)

Next.js 16, React 19, react-pdf, IndexedDB

- Built a privacy-first, client-side application to transform static academic reading into an immersive experience.
- Integrated realistic 3D page-flipping physics and an invisible HTML5 canvas overlay for non-destructive annotations.

Q-Less (Smart Canteen Application)

Android (Java), SQLite, Material 3

- Developed a professional campus food stall management application leveraging OOP to streamline ordering and reduce physical queues.
- Implemented secure institutional email authentication, live digital carts, real-time token tracking, and localization across four languages.

Hardware & Systems Integration

IoT-Based Smart Industrial Safety System

C++, Python, MQTT

- Built an integrated edge-to-cloud safety system leveraging environmental IoT sensors to continuously monitor workplace hazards.
- Implemented automated anomaly detection and real-time alert routing over the MQTT protocol to minimize reaction times and enhance industrial safety.

CERTIFICATIONS

Oracle Cloud Infrastructure 2025 Certified AI Foundations Associate

Aug 2025