Prakhar Dwivedi

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SUMMARY

Software engineering student focused on backend systems and production-ready web applications. Builds real-time services, data pipelines, and containerized deployments, with experience in caching, APIs, and applied Generative AI.

EDUCATION

IIIT Bhopal   B.Tech, Electronics & Communication Engineering, **CPI: 8.74**
Nov 2023 – June 2027, Coursework: DSA, OOP, DBMS, CN, Systems

EXPERIENCE

Software Developer (Freelance)   **Existing Site| Dec 2025 – Present**
- Developing and deploying a production full-stack platform for an NGO-backed initiative, building REST APIs, authentication, and backend business logic for a nationwide directory of homeopathic and naturopathic doctors using Next.js and Node.js.

Offensive Security Lead | XPLOIT Club, IIIT Bhopal   **LinkedIn| Sep 2025 – Present**
- Learning Offensive cyber security and fostering a culture of ethical hacking.
- Organized campus-wide CTF with 100+ participants. Conducting weekly workshops on web exploitation and cryptography.

PROJECTS

PanditAI (2026)
Next.js, Python (FastAPI), Socket.IO (WebSockets), Redis, MongoDB, Docker   Live Site . GitHub
- Built and deployed a full-stack AI application using FastAPI and Next.js, integrating astronomical computations, knowledge-graph reasoning (**Neo4j**), and LLM-based natural language generation
- Tested and benchmarked the deployed backend, observing **~5.4s cold-start latency** and **~2.2s median warm-request latency**, with **~60% performance improvement** after cache warm-up
- Optimized Docker builds by removing GPU dependencies, reducing backend image size by **~700MB** and improving deployment reliability on managed cloud infrastructure
- Validated frontend–backend API contracts using **Pydantic** and **TypeScript** types, enforcing strict schemas and preventing runtime integration errors across services

eVakeel (2025)
Generative AI, React, Fastify, GeminiAPI, Vite, Tailwind, Socket.IO, Node.js,   Live Site . GitHub
- Engineered a **full-stack web application** with a **React/Next.js frontend** and **Node.js + Python (FastAPI)** backend, designing APIs and data flows to support complex document-based user interactions
- Implemented a **production-grade legal document QA system** over **~63 high-density legal chunks (Acts)**, integrating **InLegalBERT** for semantic retrieval and achieving **~50ms warm-start query latency** under steady-state conditions.
- Deployed in Docker; used Redis for caching and structured logging for observability
- Processed 10 document templates; reduced average document-to-embedding time from **12s to 1.2s** (measured on 100 test docs), and cut median API response latency from **340ms to 190ms** after adding Redis caching

ACTIVITIES AND LEADERSHIP

- Spearheaded a team of 4 in developing an AI-fueled career counseling web app, secured a **Top 10 position at Hack-O-Sprint 2024**.
- Organized and led the first-ever **Inter-IIIT Hackathon** internal round, engaging **40+** teams across departments.
- Coordinated logistics for Convocation 2024, ensuring seamless execution for 2,000+ attendees and speakers.

ACHIEVEMENTS

- Achieved **top 12K rank among 262K** participants in **Adobe India Hackathon 2025,** placing in the **top 5% nationally**
- **Ranked 1st** in the **ECE department** with a **9.32 SGPA** in **Semester 3**, demonstrating consistent academic excellence
- **1799** LeetCode & **1614** CodeChef (3★); solved **350**+ DSA problems across **LeetCode**, **CodeChef** and **GeeksForGeeks**
- Directed **3+** peer sessions as **Teaching Assistant** for **Digital Logic Design**

SKILLS

- **Languages**: C, C++, Python, TypeScript, JavaScript, SQL
- **Frameworks & Libraries**: React, Next.js, Node.js, Fastify, Prisma, NextAuth.js, Tailwind CSS, Framer Motion
- **Databases**: PostgreSQL, MySQL, SQLite
- **Concepts**: Data Structures & Algorithms, REST APIs, Authentication, Database Design
- **Tools**: Git, GitHub, Docker, Linux (basics)