Prakhar Dwivedi

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SUMMARY

Software engineering student skilled in building and launching web applications, including developing backend services, designing APIs, and integrating applications across different systems.

EDUCATION

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

EXPERIENCE

IndiaPaathy | *Fullstack Developer (Freelance)* 					**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.

PROJECTS

PanditAI (2026)
Next.js, Python (FastAPI), Socket.IO (WebSockets), Redis, MongoDB, Docker 			Live Site . GitHub
- Built and launched a full-stack AI application using FastAPI and Next.js, integrating astronomical computations, knowledge-graph reasoning (**Neo4j**), and LLM-based natural language generation.
- Benchmarked production backend performance, 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)
Node.js, React, Fastify, Generative AI, GeminiAPI, Vite, Tailwind, Socket.IO 			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.
- Containerized and operated the application using 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

ACHIEVEMENTS

- Selected as a **Mentee** for **The Magma Core project** under the **Linux Open Source Foundation** alongside **137** others
- 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
- **1308 (Pupil)** on **Codeforces, 1799** LeetCode, **1614** CodeChef (3★); solved **400**+ DSA problems across platforms

ACADEMIC AND LEADERSHIP

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.

Quantum Face Id Security (NQM) | Research Proposal 			Under **Dr. Rahul Chaurasia** | **IIIT Bhopal**
- Proposed a model to map 128-dimensional facial embeddings into quantum states using Amplitude Encoding, optimizing qubit usage (~7 qubits for 128d vectors)

IIIT Bhopal | Teaching Assistant - Digital Logic Design 				**LinkedIn**| **Feb 2025 – May 2025**
- Selected based on academic excellence to assist faculty with evaluation and peer mentorship for a batch of **60**+ students.
- 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)