

# Aryan Patel

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## Education

Indian Institute of Technology (BHU), Varanasi

July 2021 – June 2025

B.Tech in Electrical Engineering

CPI: 8.8/10

## Skills

**Programming Languages:** Python, C++, SQL, Java, Javascript

**Dev Tools:** FastAPI, PostgreSQL, Next.js, Spring Boot, Express, MongoDB

**Concepts:** Data Structures & Algorithms, OOPs, Operating Systems, Competitive Programming, Databases

## Work Experience

### Software Development Intern | JK Lakshmi

May '24 - Jul '24

- Engineered a full-stack web platform for managing dealer orders, assigning transporters, and visualizing historical data.
- Enhanced logistics efficiency by introducing real-time order tracking and operational dashboards.
- Optimized delivery operations through a smart transporter allocation algorithm utilizing cost and proximity.
- Exposure:** Next.js, Node.js, Express.js, MongoDB, REST APIs

### Open Source Contribution | AOSSIE

May '25 – Jul '25

- Architected a hybrid database system for Devr.AI, combining Supabase and Weaviate for structured and vector data.
- Established synchronization between Supabase and Weaviate for seamless foreign key mapping.
- Integrated GitHub and Discord authentication to unify user identity across platforms.
- Created comprehensive unit tests to ensure reliability of database and authentication workflows.
- Exposure:** Supabase, Weaviate, Postgres, Python, Pytest

## Projects

### Leet-Search | Semantic LeetCode Search Engine

May '25 – Jul '25

- Developed a semantic search engine enabling conceptual retrieval of LeetCode problems using vector embeddings.
- Leveraged pgvector and Supabase for efficient storage and querying of high-dimensional data.
- Automated embedding generation and database population for over 3,000 problems via GitHub Actions.
- Deployed real-time API integration for cosine similarity-based semantic search.
- Exposure:** FastAPI, Supabase, pgvector, Next.js, Github Actions, shadcn/ui

### Real-Time Face Scanning Attendance Application

Jan '24 – Apr '24

- Designed a real-time face recognition attendance solution with automated record management.
- Built an intuitive interface using Tailwind CSS and Material UI.
- Enabled flexible attendance tracking for both classes and individual students.
- Integrated Cloudinary for secure facial image storage and matching.
- Tech Stack & Exposure:** React.js, Express.js, Node.js, MongoDB, Tailwind CSS, Material UI, Cloudinary, Multer

### AES Encryption/Decryption Project

Feb '25 – Mar '25

- Created a full-stack web application implementing AES-128 encryption and decryption with a C++ cryptographic core.
- Ensured robust cryptographic behavior through input validation, PKCS7 padding, and key management.
- Structured the application into modular components to clarify AES algorithm principles.
- Authored unit and integration tests to validate C++, API, and frontend encryption-decryption pipelines.
- Tech Stack & Exposure:** C++, FastAPI, Next.js, AES, PKCS7 padding

## Achievements

- Expert** on **Codeforces** with a max rating of **1616** and peak global rank **1418** [Codeforces Profile](#)
- Knight** on **LeetCode** with a highest rating of **1844** [LeetCode Profile](#)
- Achieved Global Rank 253 in Google Kickstart Farewell Round A (2023) and Rank 406 in Round B.
- Ranked 1418 globally** in Educational Codeforces Round 949 (Div. 2)
- Secured 2<sup>nd</sup> place among 100+ teams in Hackoverflow hackathon, IIT Electrical (BHU)
- Earned 4<sup>th</sup> position in "Hack It Out" hackathon at Technex, IIT (BHU)