# DHRUVA PRASAD UPADHYAYA

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## Education

**Indian Institute of Information Technology, Pune** **September 2021 - June 2025**
*Bachelor of Technology in Computer Science Engineering (**CGPA : 9.31/10.00**)* *Pune, India*

*Coursework : Object Oriented Programming, Data Structures & Algorithms, Database Management Systems, Computer Networks, Machine Learning, Software Engineering, Java Programming, Cloud Computing, IoT, Blockchain*

## Projects / Previous Internships

**CodeHelper** | *React.js, MongoDB, Express.js, Node.js, Fuse.js, TailwindCSS, DaisyUI, Auth0* | Code | Website

- Developed a Code-helper app that allows users to create, read, update, and delete problems, deployed on render
- Users can upload problems along with their solutions. They can also **search** for **similar** questions using highly accurate **fuzzy search engines.** The interface has Authentication and Login factors integrated with the help of **Auth0.**
- All users problems data get stored in the MongoDB database, and users can login and get access to **two search engines** for finding similar questions, a **Global search engine**, including all the questions from all the users across the website, and a **local search engine** for searching their own added questions, while also allowing sorting **based on categories.**

**QuestionBank Generator** | *OCaml, SQLite DB, dune, Latex* | Code

- Designed and implemented a Question Bank generator using the Dune build system in OCaml, under the supervision of **IIT Bombay Prof. Kumar Appaiah.**
- Allows both students and especially teachers to store important questions alongside their **answers** and **topics**, on the database, seamlessly managing multiple questions and answers stored in a local .db file
- **Command line arguments** supported for both adding and creating a question bank / paper (with or without answers)

**Encryption and Hashing for Embedded Systems, NPCIL** | *Embedded C, Computer Networks, AES, SHA-256*

- **Interned** at **NPCIL** (Nuclear Power Corporation of India Limited) [**May 2023 – July 2023**]
- Implemented the **SHA-256** algorithm and worked on the **AES-encryption** in Embedded C for transferring of important data in the **Embedded Systems**
- Developed **secure peer-to-peer communication** and **embedded communication** between two computers and between computer and Embedded systems in a LAN with the help of **AES-encryption**

**SpeedSentinel** | *CV2, YOLO, Python, pandas* | Code

- Created a **Real-Time** Vehicle Speed Detection and Monitoring, utilizing **YOLO**.
- SpeedSentinel identifies and tracks the vehicles and **calculates their speeds.**
- **Speed Violation Detection**: If a vehicle exceeds a speed threshold (e.g., 12 km/h), the system flags the vehicle by displaying a red marker on the video frame.

## Achievements

- Highest rating of **1955 [Top 3.44%] (Level : Knight)** among **500000+** people globally at Leetcode.
- Highest rating of **1612 (Expert)[Top 9%] at Codeforces, which is the top site in terms of participation of programmers across globe.**
- Highest rating of **1805 (4*) [Top 3%]** securing a **Global Rank under 5000** at Codechef.
- Secured a Global rank of **352 [Top 1.6%]** in Leetcode Weekly Contest 380 among 21000+ participants.

## Coding Profile Links

Codechef Codeforces Leetcode

## Technical Skills

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

**Technologies**: MongoDB, Express.js, React.js, Node.js, Next.js, Django, MySQL, Latex, Sanity.io, streamlit

**Version Control**: Github, Postman

**Miscellaneous / Extras**: Probability and Statistics, Linear &Non-Linear Optimization, Encryption, Complexity Analysis, Analysis & Design of Algorithms, Software Engineering, Computer Vision