



# Sudhanshu

Bachelor of Technology  
in Mechanical Engineering (Minor in Mathematics)  
Indian Institute Of Technology, Ropar

+91-7568789084  
2023meb1387@iitrpr.ac.in  
GitHub | Website  
Linkedin

## EDUCATION

Degree	Institute/Board	CGPA/Percentage	Year
Bachelor of Technology	Indian Institute of Technology, Ropar	7.29 (Till 4th Sem)	2023-2027
Senior Secondary	Rajasthan Board of Secondary Education	84.40%	2022
Secondary	Rajasthan Board of Secondary Education	91%	2020

## EXPERIENCE

- **Technology Business Incubator Foundation (TBIF)** July 2025 - Present  
*Intern* IIT ROPAR | [Website](#)
  - I am currently engaged as an Intern at IIT Ropar TBIF, where I developed the official website entirely from scratch and continue to handle its maintenance and updates to keep it user-friendly and aligned with the institute's objectives. Alongside website management, I assist senior officials with various assigned tasks, gaining valuable exposure to both technical and administrative aspects in a professional environment.

## PROJECTS

- **Checkers Game** April 2025 - June 2025  
*C++, 2D Array, Graph, Minimax Algorithm* [Github](#)
  - Developed a checkers game in C++ using a 2D array to represent the board and unique values for pieces.
  - Implemented turn-based moves, capturing, promotion, and game end conditions.
  - Used the minimax algorithm with fixed-depth search for an optimal AI opponent.
- **CoSketch** March 2025 - June 2025  
*Web Development Project* [Github](#)
  - CoSketch: Developed a real-time collaborative drawing application enabling multiple users to sketch together with live updates and session persistence.
  - Frontend: Built with NextJs, TypeScript, and HTML5 Canvas, integrating WebSocket connections for sub-100ms synchronization of drawing events.
  - Backend: Designed a Node.js/Express API and WebSocket server for room management, message broadcasting, and user presence, backed by a PostgreSQL database.
- **KD-Tree** Oct 2024 - Dec 2024  
*C++, Data Structure and Algorithms, KD-Tree, KNN, Median of Medians* [Github](#)
  - Implemented a KDTree in C++ to efficiently find the nearest k d-dimensional points to a specified d-dimensional point with an average time complexity of  $O(k \log k * d \log n)$ .
  - Achieved a creation time complexity of  $O(d * n \log n)$  from an array or vector using algorithms like Median of Medians. Priority Queue was used to perform the search of k Nearest Neighbour to a point.

## TECHNICAL SKILLS

- **Programming Languages:** C++, Rust, JavaScript, TypeScript, SQL, Arduino.
- **Development tools:** Git, GitHub, Code Editor ( VS Code, Cursor), Postman.
- **Web3:** Solana BlockChain, Dapps, Solana Native Contract in Rust, Anchor, Private Key Managment
- **WebDevelopment:** HTML, CSS, JavaScript, Tailwind CSS, TypeScript, React, NextJs, NodeJs, Postgress, Prisma, Monorepo, MongoDB, WebSocket, Pub Subs(Redis).
- **Devops:** CI/CD pipeline, Docker, Nginx(Reverse Proxies), AWS(EC2), Digital Ocean, Serverless(Cloudflare), Kubernetes(K8s).
- **Competitive Programming:** Quite experienced in competitive programming and have a good grasp on data structures and algorithms.

## KEY COURSES TAKEN

- **Mathematics:** Probability and Statistics, Linear Algebra and Integral Transforms, Calculus, Differential Equations.
- **Mechanical:** Theory of Machines, Fluid Mechanics, Solid Mechanics, Thermodynamics, Engineering Mechanics.
- **Others:** Introduction to Computing and Data Structures, Economics, Basic Electronics.
- **Additional Certified Courses:** Web Development, DevOps, Web3.

## MISCELLANEOUS

- **Achievement 1,** Web Development Internship | [Link](#) 2025
- **Achievement 2,** Secure AIR 9863 among 150K candidates in JEE Advance | [Link](#) 2023
- **Achievement 3,** Get 98.18 percentile in JEE Mains | [Link](#) 2023
- **Specialist on Codeforces,** Max Rating 1497 on handle Sudhanshu\_Gaur | [Sudhanshu\\_Gaur](#) 2025
- **3 Star on Codechef,** Max Rating 1765 on handle sudhanshu\_g | [sudhanshu\\_g](#) 2025