



Sudhanshu

Bachelor of Technology

in Mechanical Engineering (Minor in Mathematics)

Indian Institute Of Technology, Ropar

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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)

Intern

July 2025 - Present

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

[Github](#)

C++, 2D Array, Graph, Minimax Algorithm

- 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

[GitHub](#)

Web Development Project

- 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

[Github](#)

C++, Data Structure and Algorithms, KD-Tree, KNN, Median of Medians

- 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 Management
- **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