

ROHAN GARG

✉ gmail.com  [linkedin.com](https://www.linkedin.com)  github.com  portfolio.app

Education

Indian Institute of Technology Roorkee

Bachelor of Technology in Production and Industrial Engineering

Nov. 2020 – July 2024

CGPA: 7.91/10.00

Experience

Intellimation.ai

June 2024 – Oct 2024

Software Developer

- Working with R&D team, developed content detection algorithms for PDF from the base pdf encoded content streams.
- Incorporating Adobe PDF Reader APIs in the codebase for automating PDF, HTML and E-mail extraction functions.
- Made a named entity recognition algorithm, capable of detecting the primary object from structured notes by extracting the major content blocks from content streams.

NWTL

April 2023 – May 2024

Founding Engineer

- Configured and maintained HPC cluster for running OpenFOAM simulations with optimal parallel processing.
- Accelerated research on Rotating Detonating Engine (RDE) by implementing project caching mechanisms on cluster.
- Built the whole website from scratch, deployed and overlooked it's working for over a year.

SageMath

Jan 2023 – April 2023

Contributor

- Implemented algorithm for finding GREEDY and SUPER GREEDY linear extensions of POSETs and Hasse diagrams.
- Enhanced Signed Permutations Class and helper functions for Signed Permutation Group.

Projects

Chessdom Chess App | GitHub | *NextJS, Socket.IO, TypeScript, Prisma, MySQL*

Jan 2025 - Feb 2025

- Chessdom is an online web-based chess application which supports both live chess game-play and chess engine based game-play. It also hosts a game archive where all the live chess games are stored which has a valid game-over.
- MySQL database is used for storing the game archives, to make the web-app minimal and least intrusive, only the games are stored along with the usernames of the players, and no additional information about users is stored anywhere.
- A web-assembly-based Stockfish engine is used in the current version of the Chessdom app, which enables multi-threaded nature by utilizing multiple web-workers, an earlier version had a server-based Stockfish engine, but due to scaling issues and issues of longer response times between the moves, the WASM engine is selected.
- You can choose the number of cores you want to allocate to Stockfish in the initial settings menu drawer, its value always lies between 1 & $MaxCores - 1$ to avoid freezing of system.
- Live chess gameplay functionalities are handled with the help of a detached Socket.IO server [here]. The server is capable of banning any user for sending unexpected responses, persisting and reconciling game states for accidental disconnects, saving valid games to the database, handling arbitrary abandonment of the game by any player, and preparing a rematch if players agree.
- NextAuth is used to integrate GitHub and Google OAuth into the application. Both server-side and client-side route protection are used to secure important routes. A review game functionality has been added, enabling users to review any game present in the game archive.

Technical Skills

Languages: TypeScript, JavaScript, C/C++, Python, HTML/CSS

Technologies/Frameworks: NextJS, Prisma, Socket.IO, ReactJS, NodeJS, ExpressJS, TailWindCSS

Developer Tools: VS Code, Git, GitHub, Postman

Honors & Awards

HScTSS Scholar (2018) : Haryana Science Talent Search Scholarship awarded by Haryana State Government to students with a scientifically oriented mind.

Extracurricular / Leadership

National Sports Organization

Jan 2021 – July 2024

Member

IIT Roorkee

- Active member of Hockey team and undergone training as Goalkeeper.
- Secured a Gold Medal in the Inter-IIT Sports Tournament, Hockey 2022.