# Rishabh Jain

UG (III Year I Semester)
B.Tech. (Engineering Physics)
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Registration No: 22123036/2025

Indian Institute of
Technology
Roorkee

## Area of Interest

Backend systems, NLP , Generative AI , LLM's and RAG

## Education

| Year | Degree/Examination | Institution/Board | CGPA/Percentage |
|------|--------------------|--------------------|-----------------|
| 2024 | B.Tech. 3rd Year | Indian Institute of Technology, Roorkee | 8.205 |
| 2022 | Intermediate (Class XII) | Nehru World School | 97.00 % |
| 2020 | Matriculate (Class X) | Ch Chhabil Dass Public School | 98.60 % |

## Internships

**ML Intern** | Pepsales                                                       August 2024 - Present

- Developed the discovery copilot service for Pepsales using **Retrieval-Augmented Generation (RAG) and LangChain** to analyze sales call data between B2B SaaS companies, generating questions using **GPT-4o mini.**
- Implemented an on-call service that applied **cosine similarity** to detect the current question and, based on the conversation, generated follow-up questions for the seller, rating the buyer's response using a **large language model (LLM).**
- Conducted detailed post-call analyses, summarizing key answers and identifying potential blockers for further action.
- Deployed the **ML service on AWS EC2** and integrated it with MongoDB for data storage, while managing files and interactions through AWS S3.

**ML Intern** | VJ Nucleus                                                       April 2024 - June 2024

- Developed a categorization model by **fine-tuning and training BERT** (Bidirectional Encoder Representations from Transformers) on a self-created JEE question-chapter database, enhancing accuracy in question classification by 98.6%.
- Engineered an automated system to generate personalized Daily Practice Problems (DPP) by leveraging student performance analytics; increased student engagement by 40% and reduced manual workload by 25 hours weekly

## Projects

**Langchain AI Chatbot** | IMG                                                       March 2024

- Developed a **RAG-based chatbot** contextualized with IIT Roorkee's culture, lingo, campus facilities, and academic programs; leveraged **OpenAI's API and Langchain for embeddings and FAISS as vector store database.**
- Integrated data from multiple sources including Watchout's fresher's guide, official documents, PDFs, and the Multimap site of IIT Roorkee to ensure comprehensive and accurate responses.
- Implemented **tokenization** with a token size of 1000 characters and an overlap of 300 characters to optimize context retrieval.
- Employed **semantic search** capabilities using Langchain and FAISS to deliver contextually relevant and precise responses to user queries.
- Collaborated in developing the backend infrastructure using **Django** and frontend using **React** .

**Automated Memer** | MDG Space                                                       December 2023 - January 2024

- Automated the generation of short videos from Reddit posts by integrating **Reddit's API** , leading to a 40% reduction in content creation time.
- Leveraged Microsoft's **TTS Hugging Face model** to convert text to speech , Pillow (Image processing library) for handling images, Pydub for combining audios and **FFMPEG** for the video creation process.
- Integrated **Google's OAuth v2** for handling user login, designed a database schema from scratch using SQLAlchemy.
- Developed the backend infrastructure using **Flask** ,frontend using **Bootstrap** and deployed on PythonAnywhere at https://rishabhjain123.pythonanywhere.com/

**Technical Analysis using Python** | Finance Club                                                       October 2023 - November 2023

- Conducted technical analysis using Python, deployed the **web app via Streamlit** at https://technical-analysis-of-stocks.streamlit.app/ cleaned and pre processed historical data of stocks prices obtained from **yahoo finance** .
- Engineered a buy/sell decision model leveraging technical indicators like moving day averages , RSI indicator and momentum average derived from past stock data; tested my strategy on a virtual portfolio, increased portfolio return by 25% through precise and data-driven trading strategies.
- Created beautiful graphs using **Plotly** , visualizing stock prices with buy/sell signals over time , total profit over time , total cash balance with time.

**Password Manager** | IMG                                                       April 2024 - Present

- Secured IMG's Lupin server by deploying advanced **SSH** techniques and robust password management protocols, leading to a 50% decrease in security breaches and unauthorized access incidents.
- Integrated the existing backend infrastructure built in node.js with a **Command Line Interface developed in Go** , mapping each endpoint to a command in the cli.
- Designed a database schema and utilised **postgresql** for storing the user name, email , encrypted password and isAdmin boolean.

## Awards / Scholarships / Academic Achievements

- Achieved AIR 6867 (99.25 percentile) in JEE Mains 2022
- Achieved AIR 4486 in JEE Advanced 2022

## Skills

| | |
|---|---|
| Computer languages | C++, Python, JavaScript, HTML, CSS |
| Software Packages | Git, Docker, Django, Flask, ReactJS, MySQL, Postgres, Web Sockets, Langchain, Hugging Face |
| Languages Known | English(SRW), Hindi(SRW) |

## Positions of Responsibility & Extra Curriculars

**Project Associate** | IMG                                           February 2024 - Present

- IMG is a technical group that strives to lead in innovation and make the digital stay at IITR as comfortable as possible. Managed and maintained key intra-institutional applications, including Bhawan App, as well as frameworks like Omniport and services like Events. Ensured smooth operation and functionality of these applications.
- Working as a **Developer** in IMG and collaborating in enabling remote server connections using SSH keys, enhancing security and efficiency within the organisation.

**Member** | Quizzing Section                                         January 2023 - Present

- Organized a diverse range of quizzes for students, covering various genres to enhance cultural engagement on campus.

**Participant** | Syntax Error X                                          October 2023

- Innovated a **Virtual Mouse** system utilizing the Mediapipe library to convert hand gestures detected through webcam into responsive cursor actions; boosted user accessibility