

KHUSHBU RANI

+91 9876143032 | khushbu987.nirania@gmail.com | 220090006@iitdh.ac.in |
linkedin.com/in/khushbu-rani-047b2425a |

Education

Indian Institute of Technology Dharwad

B.Tech in Chemical Engineering

Dharwad

Dec 2022 – Apr 2026

- **CPI:** 8.23 / 10.0

Relevant Courses: Data Structures and Algorithms, Data Analysis, Design and Structure of Algorithms

DAV Sr. Sec Public School, Haripura (Punjab)

Punjab

- **Class 12th:** 82%

Class 10th: 90%

Experience

Intern, IIT Ropar

May 2024 – July 2024

Machine Learning Intern

- Designed, implemented, and optimized end-to-end machine learning pipelines for predicting the melting temperature of acids, leveraging **Python**, **scikit-learn**, and advanced regression models to extract reliable chemical property insights from experimental data.
- Achieved consistently high predictive accuracy across multiple models, which provided faculty with actionable results for validating chemical theories and optimizing laboratory workflows.
- Conducted rigorous experiments to validate ML outputs against theoretical frameworks, collaborated with mentors to refine feature engineering, and documented all methodologies to ensure transparency and reproducibility of results.

Projects

ImagiFy - AI Text-to-Image SaaS Platform

MERN Stack, REST APIs, JWT, Razorpay

- Developed a production-grade text-to-image SaaS platform using the **MERN stack**, where I built a modular backend with REST APIs, integrated robust session handling, and established a secure authentication pipeline with JWT and bcrypt for password hashing.
- Designed a responsive React frontend that leveraged the **Context API** for global state management of user authentication and credits, enabling a seamless and scalable user experience across sessions.
- Implemented the business logic for a credit-based API usage model and integrated the **Razorpay** payment gateway with server-side cryptographic verification, ensuring transactional security and preventing misuse of the system.
- Incorporated the **Clipdrop API** for AI-powered image generation, optimizing request handling and delivering high-quality outputs, thereby making the platform commercially viable for creative use cases.

Code Collaboration Platform (CodeCast)

React.js, Node.js, Express.js, Socket.io, CSS, Bootstrap

- Developed a real-time code collaboration web application enabling multiple users to work together in virtual rooms.
- Implemented **Socket.io** for seamless real-time communication and synchronized code updates.
- Built a responsive and user-friendly frontend using **React.js**, styled with **CSS and Bootstrap**.
- Designed backend APIs with **Express.js** to manage room creation and user connections.

Technical Skills

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

Frameworks: React.js, Express.js, Node.js

Databases: MySQL, MongoDB

Tools/Cloud: Jupyter Notebook, VS Code

Other: OOPS, DSA in C++

Achievements and Responsibilities

- Worked at FactApp, where I guided JEE aspirants in their counselling process, addressing queries and providing personalized support to help them make informed decisions.
- Secured 2nd place in Volleyball tournament (IIT Dharwad, 2024), demonstrating teamwork, discipline, and leadership in competitive settings.