

Academic Qualifications

Year	Degree/Certificate	Institute	CPI/%
2020 - Present	B.Tech	Indian Institute of Technology, Kanpur	6.42/10
2019	CBSE(XII)	Kendriya Vidyalaya, Chhatarpur	92.4%
2017	CBSE(X)	Kendriya Vidyalaya, Chhatarpur	9.2/10

Key Projects

- Linking Writing Process to Writing Quality

Course Project

 - Investigated the relationship between writing processes and writing quality using the dataset from **Kaggle**.
 - Performed **EDA** to gain insights into the **structure** and **characteristics** of the writing processes and quality data.
 - Applied **feature engineering techniques** to enhance the dataset, optimizing it for machine learning model training.
 - Evaluated **Linear Regression**, **Random Forrest**, and **XGBoost** for writing process analysis and quality prediction.
 - Implemented rigorous **hyperparameter tuning techniques** to optimize the performance of machine learning models.
 - Utilized **Accuracy** and **Mean Absolute Error** to assess the models' performance and ensure the analysis's reliability.
 - Accuracy for **Linear Regression**, **Random Forrest** and **XGBoost** achieved: **80.22**, **81.99**, and **80.83**, respectively.
- Chat Application

Self Project

 - Designed and developed a real-time chat application using **Flask** and **Socket.IO**.
 - Implemented **WebSocket communication** through **Socket.IO** to provide **instant message delivery** and **updates**.
 - Utilized **Flask** to build **backend** of the application, handling **connections**, **message routing**, and **event management**.
 - Implemented **client-side scripting** to update the **user interface** with **new messages** dynamically, user **join** and **leave notifications**, and other relevant information.
 - Leveraged **Flask's routing capabilities** to create distinct routes for different **chat rooms** and **user interactions**.
- Pathfinding Algorithm Visualizer

Self Project

 - Implemented **Graph theory** principles used to represent the map as nodes and edges for **pathfinding algorithms**.
 - Implemented **Dijkstra's** and **A*** algorithm in Python using the **Pygame** library for **pathfinding Visualizer**.
 - Created an interactive GUI, allowing users to **create/remove obstacles**, **select/modify start and end points**.
 - Integrated **visualization component** that animates **Dijkstra's** and **A*** algorithms on the grid in **real time** providing users with a clear understanding of the **algorithmic process**.
- Desktop Assistant

Self Project

 - Designed and developed a **Python-based** desktop assistant using various python libraries.
 - Implemented functionalities, including **voice commands**, **text-to-speech** synthesis and **real-time data retrieval**.
 - Integrated external APIs such as **Openai Api**, **Spotify Api** and **OpenWeathermap Api**.
 - Designed a **modular architecture** that allows easy integration of **custom plugins** and functionalities, enabling users to **tailor** the assistant's capabilities to their preferences and needs.
 - Created an intuitive user interface with **interactive voice responses** and visually appealing display using **customtkinter**.

Technical Skills

- Programming Languages:

C, C++, MATLAB, Python, JavaScript, SQL
- Software and Libraries:

Simulink, Micro-Cap, MySQL, Pygame, Flask, Pandas, Sklearn, Seaborn, Matplotlib, SocketIO

Relevant Courses

(**online courses)

Financial Markets**	Portfolio Management
Investment Risk Management**	Security Analysis for Investments
Data Structure and Algorithms**	Python and Statistics for Financial Analysis**
Data Mining and Knowledge Discovery	Image Processing
Mathematical methods in Chemical Engineering	Computational methods in Engineering

Python and Statistics for Financial Analysis | Online Course

- Manipulated the existing financial data using **statistical concepts** to analyse the markets using pandas dataframe in Python.

• Studied trading strategies and financial data for the past 10 years to make a **regression model** and build a trading strategy.

Miscellaneous

- Demonstrated strong **problem-solving skills** by successfully tackling **300+** problems on **leetcode**.

| Link
- Solved **300+** problems in **geeksforgeeks**, showcasing a dedication to **continuous learning** and a **solid foundation** in **DSA** concepts.

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