SANDEEP KUMAR

ACADEMIC DETAILS

Year	Degree / Board	Institute	GPA / Marks(%)
---	B.Tech in Chemical Engineering	Indian Institute of Technology Delhi	7.58
2018	CBSE	Army Public School, Mhow	92.2
2020	CBSE	Yashwant Public School, Mhow	88.6

SCHOLASTIC ACHIEVEMENTS

- **Jee Advanced:** Obtained an All India Rank of **2073** and got placed in the top **0.2%** of the 1.2 million total exam-takers
- **Rising Talents in Digital Chemistry:** Received a scholarship of **£3000** from UOB for Contribution to **Digital Chemistry**
- **Letter Of Recommendation:** Prof. Linjiang Chen's letter of recommendation for the **diligent work** done in his lab

INTERNSHIPS

- **University of Birmingham, United Kingdom(Offline)** : *Fine Tuning GPT Language Models* (May, 2023 - July, 2023)
  - Worked Under Guidance of Prof. Linjiang Chen to **Fine tune GPT-3.5's "ADA"** model on SMILES and their optical gap
  - To test the aforementioned **fine-tuned model**, a **webpage** was developed using **FLASK** and hosted on a **Vercel** server
  - Managed a second dataset of alloy properties with a different composition and fine-tuned **GPT-3.5** on that dataset
  - Currently working as a **co-author** on a research paper about chemical research involving **GPT Large Language Models**
- **Eduisfun Technologies Pvt. Ltd.(StepAPP), Delhi** : *Front-End Developer* (November 2022 - December 2022)
  - Worked on **MVPs**(minimum value products) along with 4 other Developers and achieved early delivery of product
  - Developed **Sanatan's** front end using **React Native**, and worked on the connection of the backend made in **Django**

PROJECTS

- **Calories Tracker** | *(DIVE Backend)* | Open-Source Project (May 2023 - May 2023)
  - Created an API using **FASTAPI** with all **authenticated** endpoints and used a **SQLite** database for storing information
  - It has several endpoints that enable users to perform **signing up**, **logging in**, and set their daily calorie targets; User can POST a request for the calories of each meal; in the absence of calorie input, the system will automatically retrieve the information via a third-party API
- **Flight Route Planner** | *(Data Structure and Algorithms Project)* (September 2022 - September 2022)
  - Build a flight route planner that utilizes **Dijkstra's** algorithm to find the **shortest** and most cost-effective routes between airports
  - Consider factors like flight distances, airline connections, and ticket prices to provide **optimal** flight itineraries to users
- **Text File compression using Huffman coding** | *(Data Structure and Algorithms Project)* (October 2022 - October 2022)
  - Implemented the **Min-Heap** data structure to perform **lossless text compression** on strings using the Huffman algorithm
  - Reduced the expected length of codes by assigning shorter *binary codes* to commonly used characters using the **Huffman tree**
- **Regression Model for LOS in Hospitals** | *(Professor Jayati Sarkar, IIT Delhi)* (October 2022 - November 2022)
  - Used **Linear Regression** in multiple variables to predict the length of stay in the hospital to optimize the uses of beds
  - Regression was applied using **Pandas** and **Sci-Kit learn**, and the dataset containing 11 health factors as features was used
- **GO-TO Website** | *(Web-Development Project)* | *Personal Project* (March 2023 - March 2023)
  - A website that provides a variety of services such as turning a **URL into Qr code**, file upload and sharing, and much more
  - Used **React.JS** for front-end development and **Express** and a few third-party APIs for the aforementioned tasks
- **Weatherify** | *(Mobile Application Development Project)* | *Personal Project* (June 2022 - July 2022)
  - The **mobile application** furnishes real-time and accurate weather information for the vast majority of cities worldwide
  - The mobile app was created using **React Native**, and data was fetched and rendered using an Open-Weather **API**
- **Group Website** | *(Professor Linjiang Chen, University of Birmingham, United Kingdom)* (June 2023 - July 2023)
  - Created a **webpage** listing the members of Prof. Linjiang Chen's group, their publications, their research and members
  - Built it with **React.JS**, purchased a domain to host it, and configured the **DNS** to make it accessible to the public
- **Enthalphy calculator for a Throttle process** | *(Professor Gaurav Goel, IIT Delhi)* (April, 2023 - April, 2023)
  - Made a C++ program that calculates the outlet enthalpy by Trapezoidal rule, temperature, phase and quality, by taking user input

TECHNICAL SKILLS

- **Programming**: C++, Python, SQL, Javascript **Data Science**: Fine-tuning, NumPy, Matplotlib, Pandas, Scikit-Learn
- **Development**: React.JS, React Native, Flask, FASTAPI, Node.JS, HTML, CSS, Bootstrap, Tailwind CSS, MongoDB
- **Tools**: MATLAB, Git, Github, Linux, LaTeX, AutoDesk Inventor, Selenium, Postman, Azure, Vercel, AWS, Google Colab
- **Key Courses Taken**: Intro. To Computer Science, Calculus, Linear Algebra & Differential Equations, Macro Economics

EXTRA CURRICULAR ACTIVITIES

- **Developer, Development Club:** Worked on **certification renewal** and managed websites of other Cultural clubs(2022-23)
- **Executive, Chemical Engineering Society**: Was in charge of creating and keeping the **ChES Website** updated (2022-23)
- **Basketball Vice-Captain:** Participated in inter-hostel tournaments and the **General Championship 2023**(2022-23)

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