



KSHITIJ KUMAR GAUTAM



ACADEMIC DETAILS

| Year | Degree / Board | Institute | GPA / Marks(%) |
|------|--|--------------------------------------|----------------|
| --- | B.Tech and M.Tech in Mathematics & Computing | Indian Institute of Technology Delhi | 6.91 |
| 2021 | CBSE | Little Flowers Public School | 94.4 |
| 2019 | CBSE | Little Flowers International School | 93.6 |

SCHOLASTIC ACHIEVEMENTS

- **NDA written Test:** Among the top few students who got selected among 8 lakh students registered. Was elected for **SSB interview**.
- **Amex Decision Track :** Cleared R1 individually as in **top 200** teams among **4k** participants with an accuracy of **57.93** .

INTERNSHIPS

- **Research Trainee | DRDO** *ISSA, DRDO (DEC, 2022 - FEB, 2023)*
 - **Military defence stability:** Did literature survey and implementation of classic models on Matlab and compared results. Did feature engineering and created an Adaptive System of models to find the most stable party among the two situationally.
 - **Comprehensive national power:** Did literature survey and implementation of classic models on Matlab and compared results. Implemented a Regression model on the best features extracted based on the results of models to calculate the CNP of a nation.
- **Undergraduate Research Assistant | HashedTokens** *Remote (June, 2023 - July, 2023)*
 - Did some Literature survey and implementation based on Explainable AI, its research areas, challenges, future prospects
 - Implemented some Explainable AI techniques like LIME and SHAP which improves the model interpretability and trustworthiness

PROJECTS

- **BinShorts | A News App with Text Summarization** *(June, 2024 - July, 2024)*
 - Implemented an end-to-end text summarizer using a **seq2seq** model with **encoder-decoder** architecture using **LSTM** cells.
 - The model is trained on the news summary dataset available on Kaggle. Used some **NLP techniques** to preprocess the data before training
 - The whole system is deployed using a **Flask Backend** and a **React Frontend**. The Frontend gets the inputs as an **Flask API**.
- **Labelly | An Image Labelling app using CNN and LSTMs** *(June, 2024 - July, 2024)*
 - Engineered an **Encoder-Decoder** Framework to caption images. Using **Xception** as Encoder and **Bidirectional LSTM** as decoder.
 - Done some NLP techniques to preprocess text data. Encoder takes images to extract features and decoder captionize them.
 - The results were acceptable with the **BLEU score >.5**. Deployed on **Streamlit** where you can upload an image to generate caption.
- **Othello Player | prof. Kirti Chaudhary** *(Jan, 2023 - Apr, 2023)*
 - Built an Othello player engine to play a board game vs Computer. Using the concept of **Mini-Max theorm** and **Decision Tree**
 - It places the best move after it takes into consideration the **next possible K moves** where K is the difficulty level user want
 - Created a whole front-end to play the game seamlessly using **Streamlit**. And finally deploying it on Netlify to access from anywhere.
- **Search Nearby Restaurants | prof. Ashish Chiplunkar** *(Aug, 2022 - Nov, 2022)*
 - Based on a given dataset over 2D space, identify the data points failing within a given rectangular query region of a point.
 - Presented two distinct approached: first, using **k-D trees** with $O(n^{1-1/k}+m)$ time complexity and second, employing modified **Range Trees** with $O(m+\log^2(n))$ time complexity, providing diverse options for efficient data processing.
- **Askmedata | SQL Based ChatBot using LangChain** *(June,2024 - July, 2024)*
 - Created a Chatbot which converts text input to a SQL query which runs on SQL database using **Google Palm of LangChain**.
 - Did **Few shot learning** for some special queries and embedded them into vectors using **HuggingFace** storing in **ChromaDB**.
 - For every query its failing it checks the similiar queries in chroma DB. Whole project is deployed using **Streamlit** for better UI.
- **Yogai | A Yoga Pose Detection App using YOLO** *(June, 2024 - July, 2024)*
 - Image classification model using YOLOv8 (for pose detection) which extracts keypoints from the image and feed to an ANN
 - Neural network(involves a dropout layer and a relu activation) make classification. Used Streamlit to create a better UI.

TECHNICAL SKILLS

- **Languages** Python, HTML, CSS, javascript, Matlab, Java | **Development:** Node.js, React.js, Bootstrap, Streamlit, Flask, Github.
- **Data Science :** Tableau, Hadoop, SQL,chromaDb, EDA | **ML :** Tensorflow, Matplotlib, Keras, ScikitLearn, Numpy, Pandas
- **Deep Learning :** ANN, CNN, RNN, FCN, LSTMs, Autoencoders, Transformers, GRU, Attention Models, BERT, YOLO
- **LLMs and Exposure :** LangChain, HuggingFace, Google Palm, RLHF, NLTK, Word2Vec, Siamese, OpenCV, GAN, pytorch, seaborn.



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IIT COURSE

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COURSES DONE

Intro. To Computer Science, Linear Algebra & Diffe. Equa., Microeconomics, Discrete Mathematical Struc., Probability & Stochastic Pro., Data Structures And Algorithms, Digital Electronics, Managerial Acc. & Finac. Mgmt., Analysis & design Of Algorithms, Algebra, Introduction To Economics

POSITIONS OF RESPONSIBILITY

- Tryst Teamhead, CAIC (July, 2021 - May, 2022)
- Squash - Vice Captain, Girnar, BHM (June, 2022 - May, 2023)
- Squash - Captain, Girnar, BHM (June, 2023 - May, 2024)

EXTRA CURRICULAR ACTIVITIES

- 1st Runner up in Overall Inter-Hostel GC, BSA Trophy - First Runner Up