

Adarsh Kumar

Third Year Undergraduate

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Academic Qualifications

Year	Degree	Institute	CPI/%
2021 - 2025	Bachelor of Sciences (BS)	Indian Institute of Technology Kanpur	8.57/10.0
2021	Class XII (CBSE)	KenBridge School, Kota	90.20%
2019	Class X (CBSE)	Sarvodaya Sr. Sec. School, Kota	91.00%

Scholastic Achievements

- Was among the top **35** to qualify for the **International Earth Science Olympiad (IESO)** 2019.
- Was among the top **300** to qualify for the **Indian National Astronomy Olympiad (INAO)** 2019.
- Secured **AIR 869** in **Kishore Vaigyanik Protsahan Yojana (KVPY)** in the SA stream conducted by IISc Bangalore 2019.
- Was among the **top 1 percent** to be awarded **Certificate of Merit** in the **Indian Olympiad in Chemistry (IOQC)**. 2021.

Key Projects

- **Build a predictive model for a Sales Company,**
 *Self Project* (May'22 – Jun'22)
 - Performed **EDA**, **dropped correlated features**, removed outliers, and imputed missing values using **KNN imputation**.
 - Implemented **Deep Feature Synthesis** using the library **Feature Tool** to create new features using existing features.
 - Improved **RMSE** score by **17%** from **946** to **1142** using **Random Forest Regressor** and **Hyperparameter Tuning**.
 - Secured **15th** rank among **10,000** participants in **Analytics Vidhya**, showcasing strong analytics skills nationally.
- **Identifying top banking policies for the customers,**
 *Self Project* (Jan'22 – Feb'22)
 - Analyzed **Customer Policy** purchase patterns to create a model for recommending the top banking policies to customers.
 - Performed basic data preprocessing to remove **outliers**, and **drop** redundant features using **RFCEV** and **data imputation**.
 - Applied **on-spot model selection** to select the best model for prediction and selected **Extra Tree Classifier**.
 - Increased **ROC-AUC** score by **19%** from **73** to **87** by improving the final model by **hyperparameter tuning**.
- **Image Processing and Computer Vision,**
 *Stamatics Project, IIT Kanpur* (May'23 – July'23)
 - Implemented fundamental processes like **sampling, quantization, filtering** and **edge detection** in image processing.
 - Learned about **OpenCV** library in **Python** and used it to display **dot-matrix representation** of a number.
 - Implemented methods to solve a **jigsaw puzzle, removing gutters** from images and **enhancing CCTV** images.
- **Rubik's Cube Solver - using Korf's IDA* Algorithm,**
 *Self Project* (May'23 – July'23)
 - Modeled a virtual **Rubik's Cube (3x3)** in **3 different models/classes** using standard data structures present in C++.
 - Learned and implemented concepts like **Object-Oriented Programming, Pattern Databases** and **Black Boxing**.
 - Achieved a solving time of under **3 seconds** for a Rubik's Cube **jumbled 8 times** using **DFS, BFS** and **IDDFS** algorithms.
 - Implemented **Korf's IDA* Algorithm**, got a solving time of under **10 seconds** for a Rubik's Cube **jumbled 13 times**.

Technical Skills

- **Languages/Frameworks:** C/C++ | Python | MySQL | JavaScript | \LaTeX
- **Web Development:** HTML | CSS | Bootstrap | Figma
- **Softwares/Utilities:** Git | Github | NumPy | Pandas | Matplotlib | Scikit | Seaborn | AutoCAD | Data Structures & Algorithms

Relevant Coursework

Fundamentals of Computing	Microeconomics I	Linear Algebra & ODE
Applied Probability and Statistics	Introduction to Electronics	Macroeconomics I
Microeconomics II	Econometrics I	Money and Banking
International Finance and Investment*	Introduction to ML*	Advanced topics in ML*

*: Ongoing Courses

Extra Curricular Activities

- **Sports Enthusiast:** Avid player of cricket, table tennis, badminton, and Volleyball. Demonstrated commitment, discipline, and teamwork through these sports, contributing to personal growth.