ADITYA KUMAR SINGH

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EDUCATION

Degree/Certificate	Institute	CGPA / %	Year
M. Tech (Department of Management Sciences)	Indian Institute of Technology, Kanpur	-	2023 - Present
B. Tech (Mechanical Engineering)	Aligarh Muslim University	8.825 CPI	2019-23
Higher Secondary Education (CBSE)	Delhi Public School, Aligarh	96.8 %	2019
Secondary Education (CBSE)	Delhi Public School, Aligarh	10 CPI	2017

PROJECTS

House Price Prediction for Ames, USA | Machine Learning | Regression (GitHub Link) | (Self Project) *July 2023*

Objective	• To predict the house prices in the city of Ames, USA using Machine Learning Algorithms.
Approach	• The dataset comprises 80 independent features, and a dependent variable "SalePrice" with 2930 observations. • **Data Preprocessing**: Conducted outlier treatment, feature engineering and handled missing values. Applied one-hot encoding and feature scaling. • **Models Used**: Employed **Linear Regression** with **Elastic Net regularization** and **Random Forest Regressor**. • **Hyperparameter Tuning**: Utilize **GridSearchCV** to optimize model hyperparameters and enhance predictive performance. • **Toolset:** Scikit-learn, NumPy, Pandas, Matplotlib, Seaborn
Result	• Achieved **adjusted R^2** of **86.6%** using **Linear Regression with Elastic Net regularization** and **adjusted R^2** of **86.3 %** using **Random Forest Regressor**.

Diabetes Prediction through Health Variable Analysis | Machine Learning | Classification (GitHub Link) | (Self Project) *August 2023*

Objective	• To develop a binary classification model to accurately predict diabetes by analysing health-related variables.
Approach	• Variables are age, gender, BMI, hypertension, heart disease, smoking history, HbA1c level, and blood glucose level. • **Data Preprocessing:** Conducted EDA, applied missing value and outliers' treatment, performed One-Hot Encoding, and feature scaling. • Dealt with **imbalanced data** using class weight balancing, Oversampling, and SMOTE. • **Models Used**: Employed **Logistic** Regression, **Decision Tree Classifier**, and **Random Forest Classifier** and optimized performance through **hyperparameter tuning** using **GridSearchCV.**
Result	• Random Forest Classifier with Over Sampling gave balanced results: Recall = 0.79, Precision = 0.72, F1 Score = 0.75

Analysis of Fandango's Movie Rating System (GitHub Link) | (Self Project) *July 2023*

Objective	• To analyze and determine if **Fandango's movie ratings** in 2015 were **biased** by comparing them to ratings from other sites and identifying discrepancies.
Approach	• Conducted data exploration on **Fandango movie ratings** and ratings from other sites (**Rotten Tomatoes, Metacritic, IMDb**). • **Quantified** and **plotted discrepancies** between **Fandango's displayed stars** and **true user ratings**. • **Visualized** and **compared Fandango** ratings with ratings from **other sites** by examining the **distribution** of **movie ratings**. • Examined **distribution** of ratings for **Top 10 worst movies** across all sites.
Result	• Identified Fandango's tendency to inflate ratings for poor films, showing 3-4 stars for clearly bad movies. • Highlighted example: "Taken 3" displayed 4.5 stars on Fandango but averaged 1.86 stars across other sites.

COURSEWORK & SKILLS *in progress*

Relevant Courses	**Statistical Modelling** for Business Analytics*	**Probability** & **Statistics***	Operations Research for Management*	Introduction to Computing*
Skills	Python	ML Libraries: NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn	MySQL*	Excel
Soft Skills	Decision Making	Adaptability	Team Management	Communication Skills	Leadership	Teamwork
Certifications	• Python for Machine Learning & Data Science Masterclass (Udemy) • Microsoft Excel - Excel Only for Beginners 2023 (Udemy) • 2023 Complete SQL Bootcamp from Zero to Hero in SQL (Udemy)

POSITION OF RESPONSIBILITY

Alumni and Corporate Relations | M. Tech. | DoMS | IIT Kanpur

• Primary responsibility involves maintaining communication with alumni of the Department of Management Sciences (DoMS) and corporate leaders of Tech industry and invite them for webinars.

ACHIEVEMENTS & EXTRACURRICULAR

• Awarded **CST UP Science Talent Scholarship** worth **Rs 2000** per Month for 2 years from **Council of Science & Technology**, Government of Uttar Pradesh. (2016-17)