

Machine Learning Projects

Instructions: Please Submit Your Complete Project by or **Before 16th Sept 2024**. **Project 1 is Compulsory** and choose any other project between Project 2 and Project 3. **Submit two projects the BIN File for Marking**. In case you need My help feel free to reach out to me. ALL THE BEST

Project 1: Linear Regression - Predicting House Prices

Problem Statement:

The goal of this project is to build a linear regression model to predict house prices based on various features such as square footage, number of bedrooms, number of bathrooms, location, and other relevant attributes. The model will help in understanding the impact of different factors on house prices and assist potential buyers and real estate agents in making informed decisions.

Description: The Ames Housing dataset contains 79 explanatory variables describing (almost) every aspect of residential homes in Ames, Iowa. The dataset includes various features like lot size, overall quality, year built, and many other factors that influence house prices.

Steps to follow:

- i. Data Exploration and Cleaning
- ii. Feature Selection and Engineering
- iii. Data Splitting
- iv. Build and Train the Linear Regression Model
- v. Evaluate the Model

Project 2: Logistic Regression - Predicting Admission to a University

Problem Statement:

The goal of this project is to build a logistic regression model to predict whether a student will be admitted to a university based on their academic profile, including their GRE score, TOEFL score, undergraduate GPA, and other relevant factors. This model will help universities identify potential candidates for admission.

Description: This dataset contains data on students applying for graduate programs at a university. It includes features such as GRE score, TOEFL score, university rating, statement of purpose (SOP) score, letter of recommendation (LOR) score, undergraduate GPA, and whether the student was admitted or not (the target variable).

Steps to follow:

- i. Data Exploration and Cleaning
- ii. Feature Selection and Engineering
- iii. Data Splitting
- iv. Build and Train the Logistic Regression Model
- v. Evaluate the Model

Project 3: K-Nearest Neighbors - Predicting Bike Rentals Demand

Problem Statement:

The goal of this project is to build a K-Nearest Neighbors (KNN) regression model to predict the daily demand for bike rentals based on various factors such as weather conditions, day of the week, and holiday status. This model will help a bike-sharing service forecast demand more accurately and optimize the allocation of bikes across different locations.

Description: This dataset contains data on bike rentals by hour or day from a bike-sharing service, including features such as date, temperature, humidity, wind speed, season, holiday status, and the number of bikes rented.

Steps to follow:

- i. Data Exploration and Cleaning
- ii. Feature Selection and Engineering
- iii. Data Splitting
- iv. Build and Train the K-Nearest Neighbors Regression Model
- v. Evaluate the Model