

# ANTICIPATION OF CAR PRICE PREDICTION

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## ABSTRACT

*(In this fast-moving generation, the present study proposes the newer concept of predicting the prices of certain items. With an idea and motivation to help everyone we came up with a solution to get an appropriate estimate of one's car using Machine Learning Techniques which will save a lot of time and money. A car price prediction has been a high interest research area, as it requires noticeable effort and knowledge of the field expert. Considerable number of distinct attributes is examined for the reliable and accurate prediction. The production of cars has been steadily increasing in the past decade, with over 70 million passenger cars being produced in the year 2016. This has given rise to the used car market, which on its own has become a booming industry. The recent advent of online portals has facilitated the need for both the customer and the seller to be better informed about the trends and patterns that determine the value of a used car in the market. To build a model for predicting the price of used cars in, we applied one of the machine learning techniques i.e., Linear Regression. Using linear regression, there are multiple independent variables, but one and only one dependent variable whose actual and predicted values are compared to find precision of results. Our pro proposes a system where price is dependent variable which is predicted, and this price is derived from factors like kilometers driven.*

**Keyword :** - car price prediction

## 1. INTRODUCTION

Car price prediction is interesting and popular problem. The number of purchase of used cars is increasing every year and this trend will continue, and the number of cars will increase in future. This adds additional significance to the problem of the car price prediction. Accurate car price prediction involves expert knowledge, because price usually depends on many distinctive features and factors. Such as Car name, manufacturing year, Km driven, Fuel type, Dealer type, Number of seats, Torque in rpm, mileage of the car, Engine power in cc, Max power range and Ownership. The main focus of our research is to enable the user to predict the car price using machine learning approach for automated calculation of car price which useful in car market. The goal of this application going to build is to predict car price and provide information about price to the users and dealers. Here Forest regressor model is used to predict the car price based on its features. this purposed research applies the concept of ensemble learning that is implemented through machine learning Approach. After implementation the result is compared with the model that has highest accuracy. The existing car price prediction system is a machine learning-based application that predicts the price of a car based on its features. The system follows a simple algorithmic approach, which involves collecting data on car features such as car name, manufacturing year, Km driven, fuel type, dealer type, number of seats, torque in rpm, mileage of the car, engine power in cc, max power range and

ownership, and then using a regression analysis technique to predict the car's price. The system has some limitations that may impact its accuracy, such as the lack of feature engineering and hyperparameter tuning, which can result in overfitting and inaccurate predictions. Additionally, the system may not consider other factors that can affect the car's price, such as the condition of the car, location, and market trends. Despite its limitations, the existing system is still functional and can provide a rough estimate of a car's price. It can be useful for buyers and sellers who need a quick estimate of a car's value. However, for more accurate predictions, the system could benefit from improvements such as feature engineering, model selection, and hyperparameter tuning to improve its accuracy and expand the range of factors considered in the prediction.

## 1.1 OBJECTIVES

The goal is to predict price of car using linear regression algorithm with better accuracy.

- i. Brand or Type of the car one prefers like Ford, Hyundai
- ii. Model of the car namely Ford Figo, Hyundai Creta
- iii. Year of manufacturing like 2020, 2021
- iv. Type of fuel namely Petrol, Diesel
- v. Number of kilometers car has travelled

## 2. PURPOSE

The used car market is an ever-rising industry, which has almost doubled its market value in the last few years. The emergence of online portals such as CarDheko, Quikr, Carwale, Cars24, and many others has facilitated the need for both the customer and the seller to be better informed about the trends and patterns that determine the value of the used car in the market. Machine Learning algorithms can be used to predict the retail value of a car, based on a certain set of features. The purpose of this project is to provide Car price prediction using machine learning without any human interference. In our day to day lives we sell and buy cars. Now there is limited facilities and application to get an appropriate price for one's car.

## 4. CONCLUSIONS

The prediction error rate of all the models was well under the accepted 5% of error. But, on further analysis, the mean error of the regression tree model was found to be more than the mean error rate of the linear regression model. Even though for some seeds the regression tree has better accuracy, its error rates are higher for the rest. This has been confirmed by performing an ANOVA. Also, the post-hoc test revealed that the error rates in multiple regression models and lasso regression models aren't significantly different from each other. To get even more accurate models, we can also choose more advanced machine learning algorithms such as random forests, an ensemble learning algorithm which creates multiple decision/regression trees, which brings down overfitting massively or Boosting, which tries to bias the overall model by weighing in the favor of good performers. More data from newer websites and different countries can also be scraped and this data can be used to retrain these models to check for reproducibility.

## 5. REFERENCES

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