CAR RESALE VALUE PREDICTION USING MACHINE LEARNING

INTRODUCTION:

The production of cars have been steadily increasing for the past decade,with 79.1 million cars being produced in the year 2021.Used cars are much more affordable in developing countries giving rise to the used cars industry which is now a flourishing industry.Vehicle price prediction especially when the vehicle is used and not coming direct from the factory, is both a critical and important task.With the increase in the demand for used cars more and more people look for alternative methods of buying cars outright.

People prefer to buy cars through lease which is a legal contract between buyer and seller. The seller category includes direct seller or third party, business entity or insurance company. Under lease contract, the buyers pay regular instalments of the item purchased for a predefined period of time. These lease instalments are dependent upon the estimated price of the vehicle and thus, sellers are interested to know about the fair estimated price of their vehicles.

Title: Used Cars Price Prediction using Supervised Learning Techniques International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249 – 8958, Volume-9 Issue-1S3, December 2019

The main objective of this paper is to predict used car price using lasso regression. A subset of attributes is selected in such a way which leads to optimal/least sum of squared error while predicting the price. It makes use of 10-fold cross-validation to “lasso” the optimal subset of attributes.

Algorithm: Lasso Regression

Advantages: Provides greater prediction accuracy as compared to other regression models and reduces overfitting.

Disadvantages: Difficult to estimate standard errors.

Title : Vehicle Price Prediction System using Machine Learning Techniques International Journal of Computer Applications Volume 167 – No.9, June 2017.

This research aims to develop a good regression model to offer accurate prediction of car price. For this we need some previous data of used cars for which we use price and some other standard attributes. Car price is considered as the dependent variable while other attributes as the independent variables.

Algorithm : Multiple Linear Regression

Advantage : Used data sets are very valuable in conducting similar research using different prediction techniques.

Disadvantage : Many assumptions were made on the basis of the data set.The future price prediction of used cars with the help of the same data set.

Title : Price Prediction for Used Cars A Comparison of Machine Learning Regression A Comparison of Machine Learning Regression Models Marcus Collard Spring 2022

Models Cars of a particular make, model, year, and set of features start out with a price set by the manufacturer. As they age and are resold as used, they are subject to supply-and-demand pricing for their particular set of features, in addition to their unique history.This study compares the performance of Linear Regression, Ridge Regression, Lasso Regression, and Random Forest Regression ML algorithms in predicting the price of used cars.

Algorithms : Linear Regression, Ridge Regression, Lasso Regression, and Random Forest Regression ML algorithms.

Advantage : The testing data is 25% the size of the training dataset and will therefore give more variance in the results.

Title : Used Car Price Prediction using K-Nearest Neighbour Based Model
International Journal of Innovative Research in Applied Sciences and Engineering (IJIRASE) Volume 4, Issue 3, September 2020

The main objective of this paper is to estimate the cost of the used cars using k-Nearest Neighbour algorithm.This model is trained with used cars data for different trained and test ratios.

Algorithm : K nearest neighbour algorithm

Advantage : The implementation of the above mentioned algorithm is hassle free and can be done in a relatively simpler manner.

Disadvantage: The implementation of making use of the KNN algorithm to predict used car value does not yield higher accuracy in huge datasets.

Title : Car's Selling Price Prediction using Random Forest Machine Learning Algorithm. 5th International Conference on Next Generation Computing Technologies (NGCT-2019)

In this paper the main objective is to predict the price of the used car by making use of random forest algorithm and extra tree regression algorithm.Post performing data preprocessing the model is trained and Hyper-Parameter tuning is done using Randomized Search CV to get optimal result.

Algorithms :Random Forest Algorithm,Extra Tree Regression Algorithm

Advantage :The algorithms mentioned in this paper would result in a highly accurate and fast prediction irrespective of the size of the dataset.

Disadvantage :The size of the dataset may vary from small to extremely large,as the size of datasets tend to grow the computing time for the prediction would also grow in a proportional manner.

References:

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