CAR RESALE VALUE PREDICTION

SASIKUMAR S (19BEC4183), SATHEESH S (19BEC4184),

SATHISH A (19BEC4187), SOUNDAR K (19BEC4199)

LITERATURE SURVEY

Prediction of Resale Value of the Car Using Linear Regression Algorithm

Author: Kiran S (2020)

The Linear Regression model for prediction of resale value of the car is provided. Linear Regression model is better suited for prediction of target attribute that is msrp (car price) and it is performing very good . Further this work can be implemented using different machine learning algorithms and approaches in order to get higher accuracy rate and lower error percentage.

Car price prediction using machine learning techniques

Author: Enis Gegic (2019)

Applying single machine algorithm on the data set accuracy was very less. Therefore, the ensemble of multiple machine learning algorithms has been proposed and this combination of ML methods gains the highest accuracy.This is significant improvement compared to single machine learning method approach. However, the drawback of the proposed system is that it consumes much more computational resources than single machine learning algorithm.

Price evaluation model in second-hand car system based on BP neural network theory

Author: Ning Sun(2017)

In this paper, they introduce an application of the online second-hand car price evaluation model, and analyze the drawbacks of the traditional formula method and the accuracy of the proposed model. on the basis of the BP neural network algorithm, we optimize the algorithm locally, which greatly improves the speed and the accuracy of this model and makes the system have the practical application value

Vehicle Price Prediction System using Machine Learning Techniques

Author: Kanwal Noor(2017)

Using Minitab, we get the price being predicted in the additional column "FIT". Apart from it, the residual value being the difference between actual and predicted response variable is also calculated. Results' samples of actual and predicted price indicating the number of observations, FIT, Resid and standard Resid

A methodology for predicting used cars prices using Random Forest

Author: Nabarun Pal(2018)

In this paper they used many techniques like supervised learning method known as Random Forest. Kaggle's dataset was used as a basis for predicting used car prices. In order to determine the price impact of each feature, careful exploratory data analysis was performed. 500 Decision Trees were trained with Random Forests. It is most commonly used for classification, but they turned it into a regression model by transforming the problem into an equivalent regression problem.

Used Car Price Prediction using K-Nearest Neighbor Based Model.

K.Samruddhi & Kumar(2020)

In this paper, They have trained their model with used cars data set to predict the price. Here they have used the K nearest Neighbor algorithm ,linear regression .where they git the highest accuracy in linear regression. The proposed model is also validated with 5 and 10 folds by using K Fold Method. The experimental analysis shows that the proposed model is fitted as the optimized model.

Prediction of prices for used car by using regression models

Author: Nitis Monburian,et al.,(2018)

In this paper multiple linear regression, random forest regression, and gradient boosted regression trees on that particular dataset. Each model was evaluated by using the same testing data. The results are then compared by using mean absolute error as a criterion. With gradient boosted regression trees gave the highest performance.

Predicting the Price of Used Cars using Machine Learning Techniques

Author: Sameerchand Pudaruth (2018)

In this paper, four different machine learning techniques have been used to forecast the price of used cars in Mauritius. The mean error with linear regression was about Rs51, 000 while for kNN it was about Rs27, 000 for Nissan cars and about Rs45, 000 for Toyota cars. J48 and NaiveBayes accuracy dangled between 60-70% for different combinations of parameters. The main weakness of decision trees and naïve bayes is their inability to handle output classes with numeric values. Hence, the price attribute had to be classified into classes which contained a range of prices but this evidently introduced further grounds for inaccuracies. The main limitation of this study is the low number of records that have been used. As future work, we intend to collect more data and to use more advanced techniques like artificial neural networks, fuzzy logic and genetic algorithms to predict car prices.

COMPARATIVE ANALYSIS OF LITERATURE SURVEY:

S.No	Year	Researcher	Title	Algorithm	Remarks
01	2020	Kiran	Prediction of Resale Value of the Car Using Linear Regression Algorithm	Multiple linear regression, k-nearest neighbour algorithms, Naïve bayes.	Highest Accuracy of about 90% has attained using Linear regression model
02	2019	Enis Gegic, Becir Isakovic, Dino Keco, Zerina Masetic	Car price prediction using machine learning techniques	Artificial neural network, SVM, Random forest algorithms.	Results have shown using only one machine learning algorithm achieved results less than 50%, whereas after combing the algorithms with pre calcification of prices using Random Forest, results with accuracies up to 87.38% was recorded.
03	2017	Ning Sun, H. Bai, Y. Geng and a. H. Shi	Price evaluation model in second-hand car system based on BP neural network theory	Random forest regression	On the basis of the BP neural network algorithm, they optimize the algorithm locally, which greatly improves the speed and the accuracy of this model and makes the system have the practical application value
04	2017	Kanwal Noor, Sadaqat jan	Vehicle Price Prediction System using Machine Learning Techniques	Multiple linear regression	achieve accuracy of 98%, this was done after reducing the total amount of attributes using variable selection technique to include significant attributes only and to reduce the complexity of the model.
05	2018	Nabarun Pal, P. A.	A methodology for predicting used cars prices using Random Forest.	Random Forest	it was found that training accuracy was 95.82%, and testing accuracy was 83.63%. By selecting the most correlated features, the model can accurately predict the car price.
06	2020	K.Samruddhi & Kumar	Used Car Price Prediction using K-Nearest Neighbor Based Model.	K-NN	this method accuracy reached up to 85%

07	2018	Monburian,et al.,	Prediction of prices for used car by using regression models	Mean absolute error	Highest results achieved was by using gradient boosted regression tree with a MAE of 0.28, and MEA of 0.35 and 0.55 for mean absolute error and multiple linear regression respectively
08	2018	Sameerchand Pudaruth	Predicting the Price of Used Cars using Machine Learning Techniques	Multiple Linear Regression Analysis, K-Nearest Neighbours (kNN), Decision Trees	NaiveBayes accuracy dangled between 60-70% for different combinations of parameters. The main weakness of decision trees and naïve bayes is their inability to handle output classes with numeric values. Hence, the price attribute had to be classified into classes which contained a range of prices but this evidently introduced further grounds for inaccuracies.