Car Resale Value Prediction

Domain: Applied Data Science

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Problem Description

It is expected that sales of old cars and second-hand imported (reconditioned) autos will rise in tough economic times. Leasing a car rather than purchasing one entirely is typical in many affluent nations. After the lease term is up, the buyer will have the option of purchasing the vehicle for its residual value, or anticipated resale value. Therefore, being able to accurately anticipate the salvage value (residual value) of cars is in the best interest of sellers and financiers from a business standpoint.

We suggest an intelligent, adaptable, and efficient method that is based on applying regression algorithms to forecast the resale value of the vehicle. A regression model needs to be constructed that would provide the vehicle's closest resale value, taking into account the key variables that would impact this value. The method with the highest accuracy will be chosen from among the several regression algorithms we employ, and it will then be implemented into the web-based application that notifies the user of the status of his product.

Literature Survey

1. Prediction of Resale Value of the Car Using Linear Regression Algorithm Kiran S:

   In this research the price of the car is considered as a dependent variable for target prediction .The data used for prediction was taken from the web. The suitability of linear regression algorithm is identified and implemented in this research work for accurately predicting the resale value of the vehicle based on most significant attributes that have been selected on the basis of highest correlation. The outcome of the research shows that the accuracy of the model built is upto 90 percent and error obtained is 10 percent.

Literature Survey

2. Price Prediction of Used Cars Using Machine Learning - IEEE - Chuyang Jin:

This paper aims to build a model to predict used cars' reasonable prices based on multiple aspects, including vehicle mileage, year of manufacturing, fuel consumption, transmission, road tax, fuel type, and engine size. This model can benefit sellers, buyers, and car manufacturers in the used cars market. Upon completion, it can output a relatively accurate price prediction based on the information that users input. The model building process involves machine learning and data science.

Literature Survey

3. Prediction of the Prices of Second Hand Cars - Özer Çelik:

In today's economic conditions, interest in second hand products has increased. Especially second-hand cars or vehicles that have a wide customer base. In the sector which has a workshop market, it is very important to make fast sales, to make the right pricing and to calculate the ideal prices of the cars in order to exchange at the right price. With linear regression analysis second-hand in such cases first determination of variables with effect on price, then it is possible to calculate the price by establishing an estimating model.

In this study, the model was established by determining 23 of 78 variables affecting the price such as price, brands and model years of 5041 second-hand cars. According to the results, it is thought that machine learning techniques could be second-hand to estimate second hand car prices. However, it is possible to reach a better estimation rate with a data set with more units and different variables.

Literature Survey

4. Used Car Market Size, Share & Trends Analysis Report By Vehicle Type, By Vendor Type, By Fuel Type, By Size, By Sales Channel, By Region, And Segment Forecasts, 2022 - 2030:

This report addresses Market Intelligence enabled effective decision making, market estimates and forecasts from 2016 to 2030, growth opportunities and trend analysis, segment and regional revenue forecast for market assessment and COVID 19's impact and how to sustain in these fast and open markets.

Literature Survey

5. Car Price Prediction using Machine Learning Techniques

To build a model for predicting the price of used cars using three machine learning techniques (Artificial Neural Network, Support Vector Machine and Random Forest). However, the mentioned techniques were applied to work as an ensemble. Respective performances of different algorithms were then compared to find one that best suits the available data set.

Literature Survey

6. Research on Second-hand Vehicle Evaluation System Based on Improved Replacement Cost Method - Chang Jaingxue, Zhang Yuquan - 7th International Conference on Energy, Environment and Sustainable Development (ICEESD 2018):

In order to meet the needs of second-hand car value assessment, the used car value assessment system has been designed based on the improved replacement cost method. This article has designed the used car value evaluation system, which is based on the improved replacement cost method. The results show that the system application effect is better

References

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3. Çelik, Özer, and Usame Ömer Osmanoğlu. "Prediction of the prices of second-hand cars." *Avrupa Bilim ve Teknoloji Dergisi* 16 (2019): 77-83.
4. Used Car Market Size, Share & Trends Analysis Report By Vehicle Type, By Vendor Type, By Fuel Type, By Size, By Sales Channel, By Region, And Segment Forecasts, 2022 - 2030
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6. Chang, Jiangxue, and Yuquan Zhang. "Research on Second-hand Vehicle Evaluation System Based on Improved Replacement Cost Method." *2018 7th International Conference on Energy, Environment and Sustainable Development (ICEESD 2018)*. Atlantis Press, 2018.