**LITERATURE SURVEY**

**CAR RESALE VALUE PREDICTION**

The various methodologies that are all used are discussed as follows:

**1) Used Cars Price Prediction and Valuation using Data Mining Techniques**

AlShared, Abdulla, "Used Cars Price Prediction and Valuation using Data Mining Techniques" (2021). Thesis. Rochester Institute of Technology. Accessed from https://scholarworks.rit.edu/theses/11086

A primary objective of this project is to estimate used car prices by using attributes that are highly correlated with a label (Price). To accomplish this, data mining technology has been employed. Null, redundant, and missing values were removed from the dataset during pre-processing. In this supervised learning study, three regressors (Random Forest Regressor, Linear Regression, and Bagging Regressor) have been trained, tested, and compared against a benchmark dataset. The researchers of this project anticipate that in the near future, the most sophisticated algorithm is used for making predictions, and then the model will be integrated into a mobile app or web page for the general public to use.

**2) Used Car Price Prediction using Machine Learning: A Case Study**

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Several regression techniques were used based on supervised machine learning to predict the resale price of used cars given many factors such as mileage, fuel type, fiscal power , mark , model, and the production year of the car. In all tested models, gradient boosting regressor showed a high R-squared score and low root mean square error. The results showed that gradient boosting regressor outperformed all tested models with a highest R2 score and a minimized root mean squared error. As a future work, it is intended to increase the performance of the model by scaling the training data and adding more other variables to the feature set.

**3) Predicting the Price of Second-hand Cars using Artificial Neural Networks**

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The aim of this study is to assess whether it is possible to predict the price of second-hand cars using artificial neural networks. Thus, data for 200 cars from different sources was gathered and fed to four different machine learning algorithms. And it was found that support vector machine regression produced slightly better results than using a neural network or linear regression. However, some of the predicted values are quite far away from the actual prices, especially for higher priced cars. Thus, more investigations with a larger data set are required and more experimentation with different network type and structures is still required in order to obtain better predictions.

**4) Prediction of Resale Value of the Car Using Linear Regression Algorithm**

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In this research the price of the car is considered as dependent variable for target prediction .The data used for prediction was taken from 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 are been selected on the basis of highest correlation.The Linear Regression model for prediction of resale value of the car is providing an accuracy of 90% and an error of 10%. Linear Regression model is better suited for prediction of target attribute that is msrp (car price). Further this work can be implemented using different machine learning algorithms and approaches in order to get higher accuracy rate and lower error percentage.

**5) Predicting the Price of Pre-Owned Cars Using Machine Learning and Data Science**

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This model reduces time and cost and is also more user friendly as a result of which there is improvement in business by selling more cars. Here we are also conducting a comparative study on performance of regression based on supervised machine learning models. Each model is trained using data of used car market collected from e-commerce website. As a result, Linear regression gives the best performance with Root mean square error (RMSE) =8902.410 . Followed by ridge, random forest regression algorithms respectively. We can also extend this project by considering more attributes like Resale history, Lic , Accidents history, image etc to the data set for getting clear and accurate analysis.