Car Resale Value Prediction

Literature Review:

1. An expert system of price forecasting for used cars using adaptive neuro-fuzzy inference.

   Methodology:

   This approach uses a neuro-fuzzy knowledge based system to predict the price of used cars. Only three factors namely: the make of the car, the year in which it was manufactured and the engine style were considered in this study. The proposed system produced similar results as compared to simple regression methods.

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

   Methodology:

   In this paper, the value assessment model dependent on enormous information investigation is proposed, which exploits generally circled vehicle information and countless vehicle exchange information to dissect the value information for each sort of vehicle by utilising the improved BP neural system calculation. It intends to set up a recycled vehicle value assessment model to get the value that best matches the vehicle.

3. Support Vector Regression Analysis for Price Prediction in a Car Leasing Application.

   Methodology:

   The regression model built using support vector machines (SVM) can estimate the residual price of leased cars with higher accuracy than simple multiple regression or multivariate regression. SVM is better able to deal with very high dimensional data (number of features used to predict the price) and can avoid both overfitting and underfitting. In particular, genetic algorithm was used to find the optimal parameters for SVM in less time. The only drawback of this study is that the improvement of SVM regression over simple regression was not expressed in simple measures like mean deviation or variance.

4. New Model for Residual Value Prediction of the Used Car Based on BP Neural Network and Nonlinear Curve Fit.

Methodology:

This paper proposes a model that is built using ANN (Artificial Neural Networks) for the price prediction of a used car. Several attributes like: miles passed, estimated car life and brand were considered. The proposed model was built so it could deal with nonlinear relations in data which was not the case with previous models that were utilising the simple linear regression techniques. The non-linear model was able to predict prices of cars with better precision than other linear models.

5. Predicting the price of used cars using machine learning techniques.

In this paper, various machine learning algorithms were applied namely: k-nearest neighbours, multiple linear regression analysis, decision trees and naïve bayes for car price prediction in Mauritius. The following attributes were studied: brand, model, cubic capacity, mileage in kilometers, production year, exterior color, transmission type and price. However, the author found out that Naive Bayes and Decision Tree were unable to predict and classify numeric values. Additionally, limited number of dataset instances could not give high classification performances, i.e. accuracies less than 70%

References:

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