# LITERATURE SURVEY - CAR RESALE VALUE PREDICTION

TEAM ID **: PNT2022TMID32608**

1. **Prediction of car prices using quantify qualitative data and knowledge-based system – Oct 2019**

   **Authors :** D. Thai, Luong Ngoc Son, Pham Vu Tien, Nguyen Nhat Anh, T. Nguyen

   This paper acts as a base or a reference for multiple papers published on used car value prediction. Van Thai build a knowledge-based system using qualitative data and use quantitative data analysis to predict second-hand car prices. They conduct pre-processing by narrowing the car features and hence acquire qualitative data (the brand, name, actuator, seller, fuel, colour, and origin) and numeric variables ( kilometers driven and age). After discovering the data, it can be divided that into two types: structured and unstructured that require knowledge-based analysis.

   This paper will involve the techniques for extraction of meaning, data inference, and rules for qualitative data. The main purpose of this research is to explore different data types of car data and the objective is to create an automated technique to predict car prices.

2. **Car Price Prediction Using Machine Learning - June 2021**

   **Authors :** Ketan Agrahari, Ayush Chaubey, Mamoor Khan, Manas Srivastava

   **Technology and algorithms used:**

   Machine Learning, Linear Regression, Lasso Regression, Correlation.

   This analysis can be used to study the trends in the industry, offer better insight into the market, and aid the community in its smooth workflow. The aim of this research paper is to predict the car price as per the data set (previous consumer data like engine capacity, distance travelled, year of manufacture, etc.). The result of these algorithms will be analysed and based on the efficiency and accuracy of these algorithms, the best one of them can be used for the said purpose.

3. **Used Cars Price Prediction using Supervised Learning Techniques – Dec 2019**

   **Authors :** Pattabiraman Venkatasubbu, Mukkesh Ganesh

   **Technology and algorithms used:**

   ANOVA, Lasso Regression, Regression Tree, Tukey’s Test

   This analysis/paper focuses on a statistical model which will be able to predict the price of a used car, based on previous consumer data and a given set of features The emergence of online portals such as CarDheko, Quikr, Carwale, Cars24, and many others has facilitated the need for both the customer and the seller to be better informed about the trends and patterns that determine the value of the used car.

   By training statistical models for predicting the prices, one can easily get a rough estimate of the price without actually entering the details into the desired website. The main objective of this paper is to use three different prediction models to predict the retail price of a used car and compare their levels of accuracy.

4. **Used car price prediction - Apr 2021**

**Authors :** Praful Rane, Deep Pandya, Dhawal Kotak

**Technology and algorithms used:**

Machine Learning, Linear Regression, Ridge Regression, Lasso Regression, Decision Tree Regressor

The price of a new car in the industry is fixed by the manufacturer with some additional costs incurred by the Government in the form of taxes. So, customers buying a new car can be assured of the money they invest to be worthy. Therefore, there is an urgent need for a Used Car Price Prediction system which effectively determines the worthiness of the car using a variety of features. Existing System includes a process where a seller decides a price randomly and buyer has no idea about the car and it's value in the present day scenario. In fact, seller also has no idea about the car's existing value or the price he should be selling the car at. To overcome this problem, a model was developed which is highly effective.

5. **How much is your car worth ? - Aug 2017**

**Author :** Shonda Kuiper

**Technology and algorithms used:**

Machine Learning,Multiple Regression,Dummy Variables, Heteroskedasticity, Data Transformation,Residuals.

This paper discusses the development of a multivariate regression model to predict the retail price of 2005 General Motor (GM) cars. Statistical textbooks typically offer many small data sets chosen to illustrate a variety of issues and techniques that a user of regression should know. Although small data sets can offer the advantage of sharp focus on particular issues, their narrow focus carries disadvantages as well. Working with a large, richly structured data set can give students a kind of experience not possible with a succession of smaller data sets.

6. **How much is my car worth?**
**A methodology for predicting used cars prices using Random Forest – Nov 2017**

**Authors :** Nabarun Pal, Priya Arora, Dhanasekar Sundararaman, Puneet Kohli, Sai Sumanth Palakurthy

**Technology used :** Random Forests, Regression, Decision Trees

In this paper, a supervised learning method namely Random Forest is used to predict the prices of used cars. The model has been chosen after careful exploratory data analysis to determine the impact of each feature on price. A Random Forest with 500 Decision Trees were created to train the data. From experimental results, the training accuracy was found out to be 95.82%, and the testing accuracy was 83.63%. The model can predict the price of cars accurately by choosing the most correlated features.