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Predicting the Price of a Vehicle based on Vehicle Features

Introduction:

With a constant stream of new automobiles being rolled out onto the market each year, a potential buyer may have trouble finding the best price range for what type of vehicle they want. This project aims to use a large dataset of vehicles, including their make, model, miles per gallon (MPG), price, and many other bits of information relative to a model to train the machine in determining the price of a vehicle based on several features presented. If successful, we hope that the model could be used to allow customers to input features of a vehicle and determine a relative price range.

Study Objectives

The current goals for this project are to train a machine using a dataset of vehicles to determine the price of said vehicle, or a set of features of a vehicle. This would ideally be done by setting price ranges of $5000 and having the vehicles grouped into these. From there, key features, such as MPG, body style, and vehicle brand would be examined to find correlation between them and cost. After testing the machine with the data provided, another test could be done by manually inputting features of an automobile and seeing if the machine could determine what price the automobile in question is. This test would occur after using a training set or K-fold Cross Validation. Additionally, if more data could be found, this would also aid in training the machine.

Project Activities

The activities involved within this project are: develop features that would allow the machine to categorize the vehicles by price range and examine the vehicle features provided in the dataset within each price range, train the program using these features using a training set or 5/10-fold Cross Validation, and develop a way for a user to input their own variables so that the machine may output a price range corresponding to the closest match.

References

Data set: <https://www.kaggle.com/ljanjughazyan/cars1>