LITERATURE SURVEY

8.Predicting Gasoline Vehicle Fuel Consumption in Energy and Environmental Impact Based on Machine Learning (2022)

INTRODUCTION:

The underestimation of fuel consumption impacts various aspects. In the vehicle market, manufacturers often advertise fuel economy for marketing. In fact, the fuel consumption reference value provided by the manufacturer is quite different from the real-world fuel consumption of the vehicles. The divergence between reference fuel consumption and real-world fuel consumption also has negative effect on the aspects of policy and environment. In order to effectively promote the sustainable development of transport, it is urged to recognize the real-world fuel consumption of vehicles. The gaps in previous studies includes small sample size, single data dimension, and lack of feature weight evaluation.

According to the relative weight of each factor in the most optimal model, the three most important factors are brake and accelerator habits, engine power, and the fuel economy consciousness of vehicle owners in sequence.

ADVANTAGES:

It is worth noting that strong correlation between climate features often leads to multicollinearity, so we conducted a correlation coefficient test on the input climate features.

Vehicle owners chose less stop-go, more unblocked road in the past year.This is seen as better driving habits.

The real-world fuel consumption rate with the corresponding driving behavior information and climate information is used as input variables in our models.

DISADVANTAGES:

Random forest regression averages multiple decision trees based on bagging algorithm and can significantly reduce variance to improve overfitting.

Linear regression cannot capture a nonlinear relationship.

Fuel consumption forecast is a continuous variable forecast, where regression models should be applied.

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