

# Predict car mileage — Machine Learning Regression using auto-mpg dataset

Step-by-step instructions along with backward elimination, cross\_val\_score and KFold explanation



**The mission is to predict the mileage of a particular car in city driving, given data of some parameters (features) for hundreds of cars.**

This project uses [UCI dataset](#) of almost 400 cars with accurate values of following parameters.

- |                  |                                   |
|------------------|-----------------------------------|
| 1. mpg:          | continuous                        |
| 2. cylinders:    | multi-valued discrete             |
| 3. displacement: | continuous                        |
| 4. horsepower:   | continuous                        |
| 5. weight:       | continuous                        |
| 6. acceleration: | continuous                        |
| 7. model year:   | multi-valued discrete             |
| 8. origin:       | multi-valued discrete             |
| 9. car name:     | string (unique for each instance) |

The idea is to train a machine learning model to learn the relationship (weights for regression equation) between dependent variable (y) and independent variables or features (x1, x2, x3 etc).

*It's obvious that the mileage of a vehicle doesn't depend purely on only these parameters. There are several other factors in play like direction and strength of wind, city roads, city traffic, weather, driver experience and ability etc.*

The steps I have followed are more or less commonly followed steps for all regression machine learning problems. However, I have displayed and explained 2 other key aspects of approaching and [solving a regression machine learning problem](#)

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1. Using cross\_val\_score to choose the best ML algo

2. Feature Selection using backward elimination

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