NAME:

Engine Size vs. MPG Prediction Using Polynomial Regression Models

Dataset Link:

(Local file used: Engine_Size_vs_MPG.csv)

Drive link:
https://drive.google.com/file/d/10CjVeItNW_YX8uz9ZHdYOq4Qpze_OiPs/view?usp=sharing

Methodology Name:

Linear Regression and Polynomial Regression (Degree 4)

Inference:

This project models the relationship between engine size (in liters) and fuel efficiency (MPG). Exploratory data analysis indicated a non-linear inverse correlation: as engine size increases, MPG decreases. Both linear and polynomial regression models were trained. While the linear model captured only a general trend, the polynomial regression (degree 4) offered a much better fit by modeling the curvature in the data. Therefore, polynomial regression is more suitable for this prediction task. Additionally, predictions made for an engine size of 2.3L showed that polynomial regression provided more realistic and accurate estimates of MPG.