Group 1 Project 4 Proposal

Introduction

Dataset: https://www.kaggle.com/datasets/rupeshraundal/marketcheck-automotive-data-us-canada

We chose to explore this dataset because it presents a combination of challenges and opportunities to apply a wide range of machine learning techniques. It offers a great opportunity for data visualization through a Tableau dashboard. Additionally, we plan to create an interactive user interface that allows users to enter their car details and receive an estimated price for their vehicle. By building a predictive model, we aim to help both buyers and sellers better understand the factors that influence the price of a used car.

Any possible biases or limitations?

Geographical bias could be a potential issue. If the dataset predominantly contains cars from a specific geographic area, predictions for cars in underrepresented regions may be less accurate. Another limitation is the absence of unmeasured variables, such as repair history, accident history, or customizations. These missing factors could lead to less accurate predictions, as they may significantly influence car prices

Research questions:

1. What are the most important factors influencing the price of a used car?
2. How do car age and mileage interact to affect the depreciation rate of used cars?
3. Do certain make or models retain their value better than others over time?

Inspiration

Here are some examples and sources of inspiration that are similar to our datasets:

1. https://www.kaggle.com/code/zacktack/us-cars-eda-price-estimation-model-xgboost
2. https://www.kaggle.com/datasets/doaaalsenani/usa-cers-dataset/data

Tableau Public Example :

1. https://public.tableau.com/app/profile/matthew.taylor4308/viz/UsedCarsDashboard_17103964856280/Dashboard1

2. https://public.tableau.com/app/profile/becket.cordrey/viz/usedcar_17122434570450/ScatterPlot

Color Palette

Roles & Responsibilities

Andrew: data cleaning, tableau, slides

Samrawit Basazinew: tableau, slides

Jessica: Machine Learning, slides

Alex: HTML/CS, slides

Link to GitHub: https://github.com/andrew-m-vick/project-4-group-01