**CMPE 460 - Deep Learning Course**

Fall 2022 - Project Proposal

| **Name of the project:** | Car price estimator |
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| **Project team member (s):** | Mohammad Hamed 120200155  Mohammed Ghassan Nasseir 119200029 |
| **Project idea:** | **State the problem you want to solve:**  The project is targeted at car buyers with little to no experience in buying cars on the used market.  This project will enable users to get an approximate estimate of a car’s market value based on its feature, and condition.  **State how your project will solve this problem**  The user will provide the details and description of the car in question. The details of the car may include but are not limited to: the car’s production year, the car’s mileage, and the car engine displacement size. etc. These features will be used to analyze the potential market value of the car. |
| **Data sources:** | **Which datasource will you use? Provide URL of data, what that data contains, features, etc.**  This project will be using a labeled Kaggle dataset. <https://www.kaggle.com/datasets/deepcontractor/car-price-prediction-challenge>  The data contains different car listings with their prices. The number of features and listings used will vary in the upcoming stages.  **Is your data labeled?** Yes  **How will you train/test/validate your models?**  The training/validation split will be 70/30. 70 for training and 30 for validation  **Which data will be used to test your project by the end-user?**  Automotive selling platforms. E.g Autotrader, Facebook Marketplace, eBay Motors, etc. |
| **Architecture / algorithms** | **Provide the deep learning framework you will use:** Scikit learn, tensorflow, pytorch. To be decided after testing.  **Which architecture/algorithms you will use?**  Linear Regression implemented using Vanilla Neural Network with hidden layers,and activation functions. Will probably use ReLU, Leaky ReLU, sigmoid, etc.  **Describe the steps of your data pipeline? Model pipeline?**  Preprocessing data - data entering neural network - going through layers - output price estimation |
| **Model serving** | **How you plan to serve your project? (batch, API, UI, etc.). Provide a high-level overview of what you will deliver in the demo.**  The project will be served to the users in an application format. Either by using a python library or a c# application depending on the direction of the project.  In the demo we plan to deliver a working windows python application which takes in parameters from the user and returns an estimate of the car price. |