**Immersion ’22: Hack-A-Sprint!**



***Intro:***

Salvage Bid is an industry leading salvage auto auctioneer. Most of their business revolves around post-accident cars (including catastrophe damage) with salvage titles. Insurance companies comprise the majority of the seller base with dismantlers being the majority buyers.

A typical live auction lasts about 6 seconds per vehicle. As per a typical auction, the goal is to buy the vehicle at the lowest price possible in order to maximize net profits when the car is sold for resale or dismantled for parts. Traditionally, resellers and dismantlers hire car experts who have years of experience to bid on the vehicles although there has been a recent trend to try and use data from previous auctions to help make more informed bids. Salvage Bid has records of thousands of cars sold at auction and have recorded these attributes of each vehicle (SalvageBidDataTrain.csv):

***Pre\_Accident\_Value – Estimated Blue Book value of the Car Before the accident***

***Cost\_of\_repair - estimated cost to repair the car***

***odometer – current miles on the car***

***engine\_displacement – size of the engine***

***Damage\_Type - location of damage to the car***

***make\_nm – make of the vehicle***

***model\_nm – model of the vehicle***

***fuel\_type – diesel or petrol***

***Age – age of the car in years***

***Sale\_Price – winning bid for the car (highest bid for the car in the auction)***

***The Goals:***

Goal 1: Create a model to help to know how much to bid on a given vehicle. Use the internet, collaborate, create new features, create multiple models and combine/ensemble them, create different models for different subsets of data or anything that you can think of. The test set provided to you has all the attributes except for “Sale\_Price”. The goal is simply to produce the lowest RMSE on the hold out set (SalvageBid Test.csv).

Goal 2: Salvage Bid would like for you to create a one slide visualization that can convey some useful relationships and guidance that may help them make a bid on any given car. Salvage Bid knows that their bidders are old-school and simply will not take the time to read more than a sentence but have in the past responded to aesthetically pleasing plots, figures, charts and table to help them learn current trends and other information that may improve their bids. Your visualization must fit on one PowerPoint slide and thus must be visible without scrolling. The visualization will be judged on a) business insights / value and b) visual appeal. Remember, this visualization is meant to be used by the bidder while he or she is by themselves; you won’t be able to speak to or explain your visualization and the bidder does not respond well to anything more than sentence of written explanation.

***Submission:***

Your team should submit 2 files:

|  |  |
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| 1. Csv file with column 1 as vehicle identifier (Vehicle\_ID) and column 2 as predicted sale price for the vehicles in the holdout set. | Format: |
| 1. A single PowerPoint Slide: A picture is worth `1000 words and a good visualization is worth 1000 pictures! | Example: |

***Prizes:***

1. Lowest RMSE on the holdout set (SalvageBid Test.csv)
2. Best Visualization / Business Insight