**Team 5: U.S. Electronic Vehicle Sales and Technical Paper Citations Analysis using a DNN approach**

UH SPE Machine Learning Bootcamp First Project: Non-Linear Modelling and DNN

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Abstract

This work is a continuation of the previous project, which objective was to establish a metric for understanding the impact that a technical paper has over the sales and improvements of electric vehicles. By using a non-linear model our main goal was to predict the number of electronic vehicles that will be sold in the coming years after the paper is released. Understanding future vehicle sales will allow vehicle manufacturers to know the number of vehicles that will need to be produced in a given year.

However, after implementing the model to our dataset, which we divided into two variables (dependent and independent variables). The independent variable was the time series of technical publications that are related to lithium ion batteries technologies. Publish or Perish 7 software were used to extract the data. The second variable “dependent variable” was the time series of include electric, hybrid electric, and plugin hybrid vehicles which were gathered from AFDC.Gov. We weren’t able to obtain the desire outcome, due to several issues, among them data size and the model used.

Therefore, applying the knowledge that we had acquired during the analysis and development of the previous project, from the lecture and some research, we decided to approach the problem from a different perspective using Deep Neural Network models (DNN). By using this model, we will be able to make a prediction with a higher level of accuracy using several variables. This way our already stablished objective will be accomplished.