

Finding The Pattern For Lowest Gas Price

Victor Martinez
victor.martinez05@utrgv.edu
Hector Lopez
Hector.e.lopez01@utrgv.edu

September 30, 2019

Summary of the Proposal

Depending on your location, and the time of day, gas prices could be reasonable, or overpriced. Some gas stations fluctuate their gas prices throughout the day to account for rush hour for example. Gas stations also adjust their pricing based on their location (well to do neighborhoods vs poverty stricken ones). We hope to be able to acquire enough data to be able to reliably predict where the cheapest gas is, given a time and day of the week. Our data would consist of simply the location, time of the day, day of the week, and flagging the location(s) with the cheapest gas price.

Background

As mentioned in the summary, gas prices vary throughout the day, and throughout different regions. For example, California's average gas prices is over four dollars a gallon(as of Sept 2019), whereas Texas is almost half the price (as of Sept 2019)(1). We hope to capture this variance on a much smaller scale, using local gas stations and their prices. By gathering reliable gas price data from various places around the region, throughout the day, we'll be able to find the patter for the cheapest gas prices using machine learning algorithms.

Goal and Objectives

Our goal for this project will be to reliably predict where gas is cheapest, depending on the time of day, and the day of the week. That is our main objective. The more data we gather, the better our results, so that is one obstacle we hope to overcome, mainly being able to reliably gather gas prices throughout the region.

Data and Methods

Using Google and websites such as GasBuddy.com, we plan on collecting gas price data from places near the university campus. To ensure the data is accurate, we will drive to some of those locations to verify. This process will be completed daily for a week as the intended minimum. Because gas price fluctuations are generally reported monthly, a second week of data collection might be considered for the data to be more robust, if time accommodates. With gas prices collected from different stations on a daily basis, we will attempt to predict future fluctuations and test our results.

References

1. <https://gasprices.aaa.com/state-gas-price-averages/>
2. <https://www.eia.gov/energyexplained/gasoline/price-fluctuations.php>
3. <https://www.gasbuddy.com/>