1. Introduction

Austin is the capital city of the U.S. state of Texas. Incorporated on December 27, 1839, it is the 11th-most populous city in the United States, the fourth-most-populous city in Texas, and the second-most-populous state capital city (after Phoenix, Arizona) [1][2]. Austin is also the one of the most car-dependent large Texas cities. According to the 2011-15 from the U.S. Census Bureau's American Community Survey, only 6.6 percent of the household in Austin didn't have vehicles [4]. The growth of demand for vehicles is inescapable in this city.

Currently, there are about 280 million vehicles in operation in the United States, an increase of about 1.6 percent. The rising demand for used vehicles means that used vehicle inventories are declining. As a result, used vehicle prices are expected to increase [3]. Thus, it is advantageous for a company or person who may want to buy or sell a used car to predict the price of the used car and explore the car dealerships within certain distance.

The location data and Craigslist used car dataset might contribute to the analysis of used car price. This study aims to predict the price of a used car and create a map to locate the used car dealer in Austin area.

2. Data Source

Craigslist is the world's largest collection of used vehicles for sale, and a dataset which includes every used vehicle entry within the United States on Craigslist was created for a school project. This used car data set is published in Kaggle, and free to download.[5]

This dataset contains 458213 records from Craigslist covers 51 states in USA. As this study is focusing on predict cars price in Austin, we will only use the data in Texas. There are 26 attributes including build year, manufacturer, mode, condition, etc.

To obtain the car dealers' information within the study area, Forsquare API will be used to identify the dealerships.[6]

References:

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