Data Analysis and Visualizations

Introduction

This act report includes the basic data analysis of WeRateDogs twitter account data from datasets, twitter_archive and image_predictions.

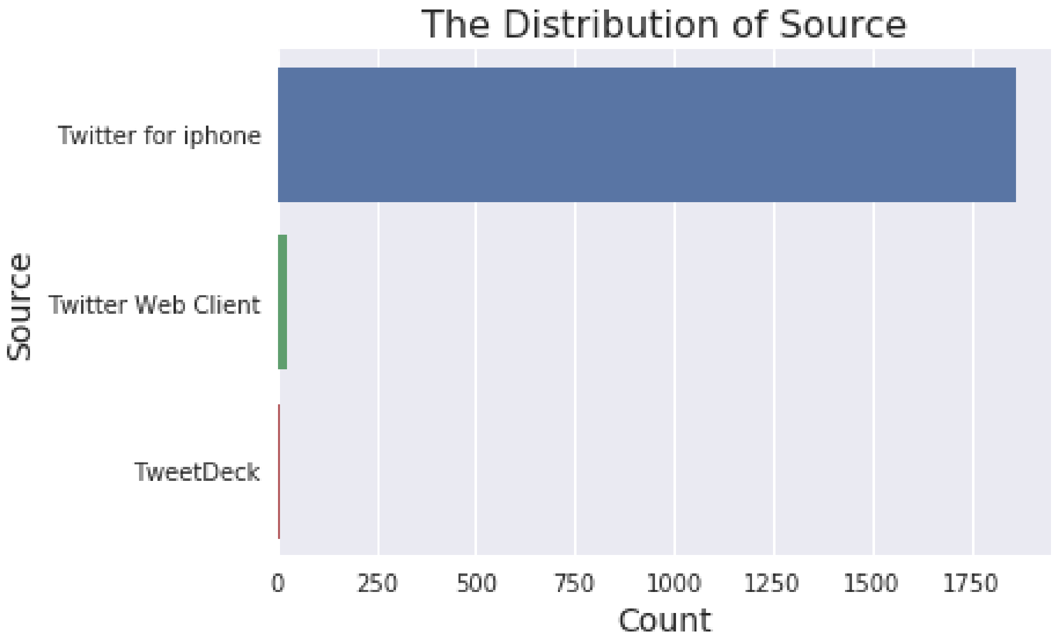
It provides the following insights from analysis and visualization results.

Data Analysis and Visualizations

1. The Distribution of Source

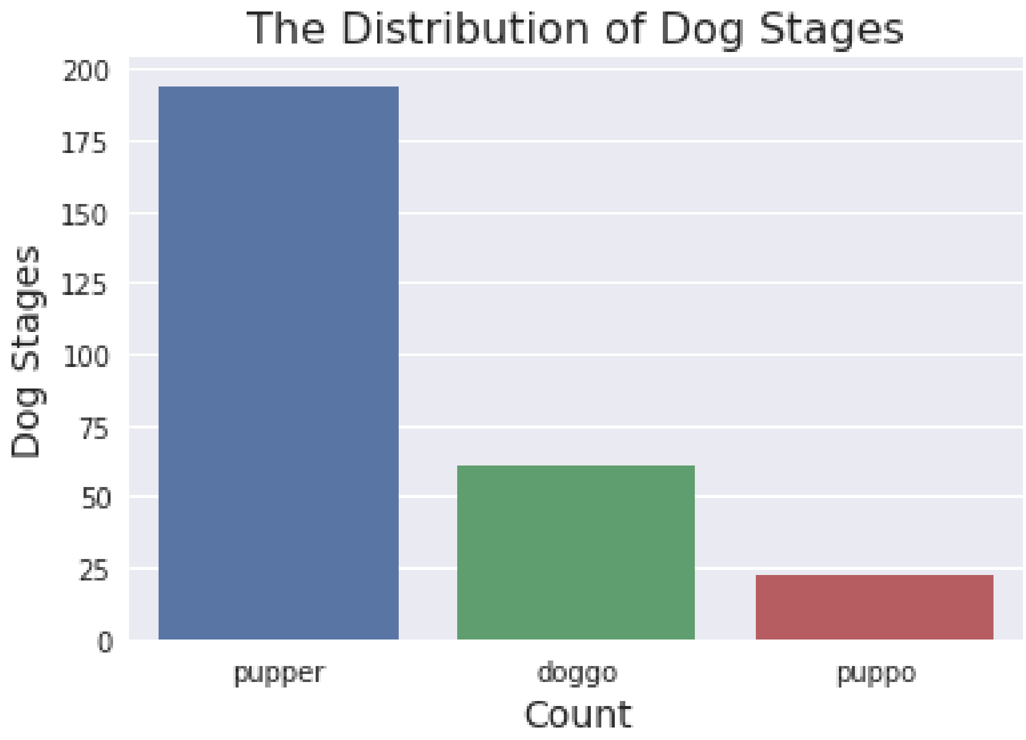
This plot above shows the distribution of source. We can see that the dominate source of tweets is from iPhone twitter app, which is 95% in the total. That means the twitter app is the main channel for people using to tweet, retweet, post, and others, while the TweetDesk is pretty rare (less than 1%).

```
Twitter for iphone    1861
Twitter Web Client      25
TweetDeck               10
Name: source, dtype: int64
```



2. Distribution of Dog Stages

Similarly, I check the distribution of dog stages. It shows that ‘pupper’ (a small doggo, usually younger) is the most popular dog stage, followed by ‘doggo’ and ‘puppo’. It could be due to the young and unmatured dog is usually cuter than the adult dog. It should also be noticed that there’s huge amount missing data in dog stages, thus the distribution may not reflect the truth.

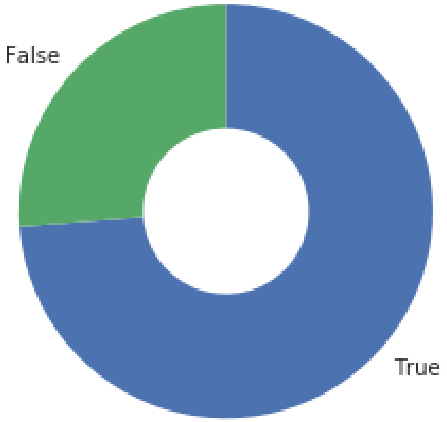


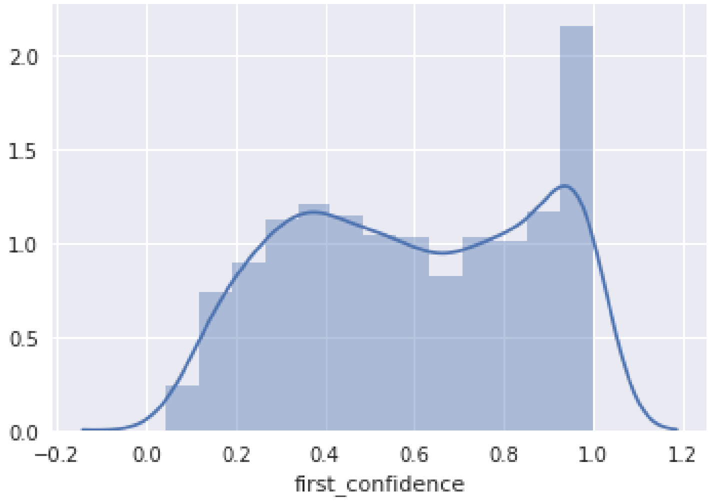
3.Classification of Dog Result Analysis

The image_predictions table stores the result of a classification of dog breeds through a neural network. I am curious about the the how this model works? What’s the accuracy of this model? Therefore, I analyze and visualize the results in below.

```
golden_retriever      150
Labrador_retriever    100
Pembroke               89
Chihuahua              83
pug                    57
chow                   44
Samoyed                43
toy_poodle             39
Pomeranian             38
malamute               30
```

These breeds above are the top 10 dog breeds this model predicted. Golden retriever and Labrador retriever are top 2 and both over 100 predictions. It could be because those two are most common breeds in U.S. We have more image data on those breeds, and thus trained a better result.





The first plot above shows the prediction success rate of whether or not first prediction is a breed of dog. The pie chart indicates almost 2/3 situations the predictions are correct, even though this result is not good enough for a deep learning model. The second plot shows how confident the algorithm is in its first prediction. We can see 100% is the most cases, however the amounts of 0.1 to 0.8 dominate the entire distribution. That also could suggest that the model is not good enough.