Can You Predict Bike Sharing Demand?

Let’s try to forecast use of a city bike share system.

The Problem

Via The Kaggle Competition:

"Bike sharing systems are a means of renting bicycles where the process of obtaining membership, rental, and bike return is automated via a network of kiosk locations throughout a city. Using these systems, people are able rent a bike from a one location and return it to a different place on an as-needed basis. Currently, there are over 500 bike-sharing programs around the world."

I want to be able to predict how many people will be using bikes on any given day. I have to predict the total count of bikes rented during each hour covered by the test set, using only information available prior to the rental period.

My Guess (response variable)

My response variable will be something in the data called:

count - a count of the number of total rentals.

The Inputs (explanatory variables)

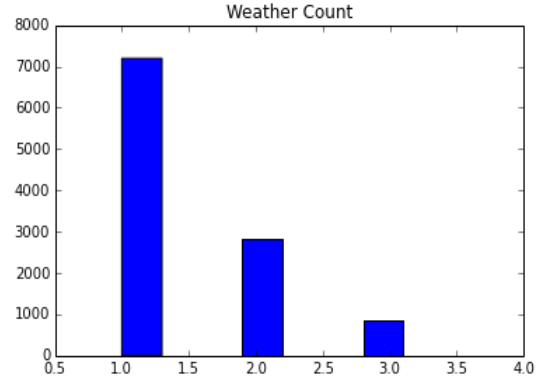
- **datetime** - hourly date + timestamp (STILL FIGURING OUT HOW TO DO THIS...)
- **season** - 1 = spring, 2 = summer, 3 = fall, 4 = winter
- **holiday** - whether the day is considered a holiday
- **workingday** - whether the day is neither a weekend nor holiday
- **weather** :
    - 1: *Clear, Few clouds, Partly cloudy, Partly cloudy*
    - 2: *Mist + Cloudy, Mist + Broken clouds, Mist + Few clouds, Mist*
    - 3: *Light Snow, Light Rain + Thunderstorm + Scattered clouds, Light Rain + Scattered clouds*
    - 4: *Heavy Rain + Ice Pallets + Thunderstorm + Mist, Snow + Fog*
- **temp** - temperature in Celsius
- **atemp** - "feels like" temperature in Celsius
- **humidity** - relative humidity
- **windspeed** - wind speed
- **casual** - number of non-registered user rentals initiated *(**I may not use this**)*
- **registered** - number of registered user rentals initiated *(**I may not use this**)*

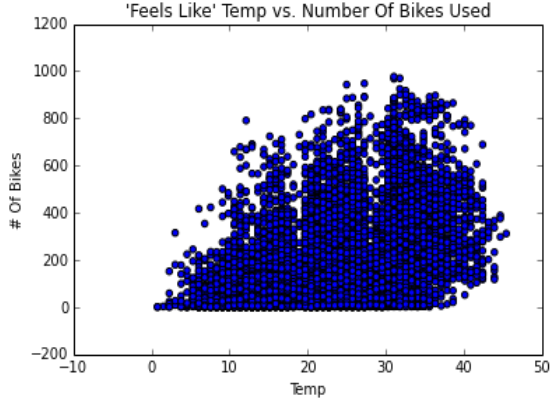
Representing Variables as Features?

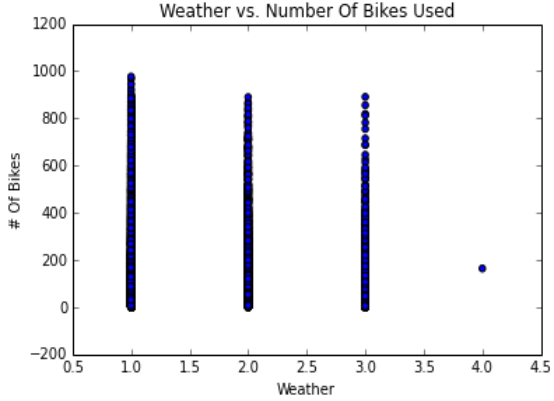
Both season and weather are already set up for me but I could have converted them into features.

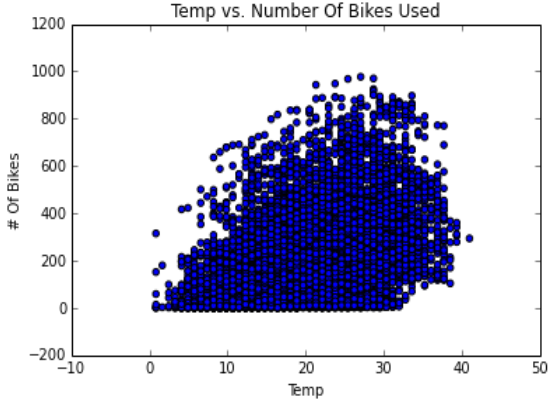
**Note: I don't exactly know how to represent time and it might make sense for it to be a feature.*

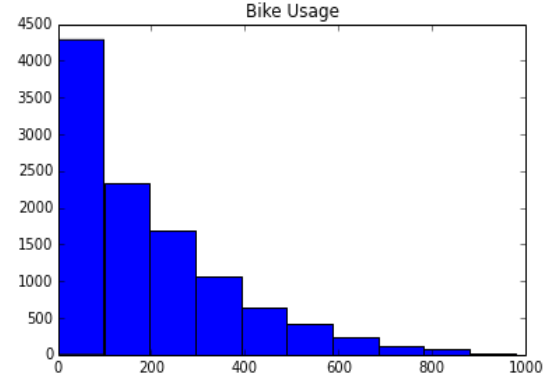
My Findings So Far

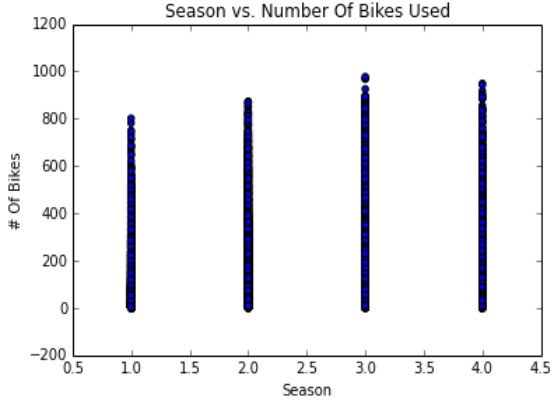












In A Nutshell

So far my best guess is that during warmer months on a certain working days with the right temp you will get more bikers.

More to come...