Project Proposal for Citi Bike

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Abstract

The goal of this project was to pitch a well-scoped project proposal and preliminary analysis for Citi Bike to try to get my foot through the door. I defined a realistic business problem faced by Citi Bike. I also developed a fully-scoped project for how data science methods can be used to solve the problem. I used the Citi Bike Trip dataset for my analysis. After cleaning and exploring the data, I built an interactive dashboard on Tableau to showcase my findings.

Design

Business problem:

With continuous expansions and changes within Citi Bike and the change in ridership behaviors over the last year due to Covid 19, Citi Bike needs to adjust its operations to address potential discontent and loyalty due to service.

Impact hypothesis:

By better understanding the changing trends in the past year due to Covid-19 and the continuous expansions within the company, Citi Bike can adjust their rebalancing operations, which can avoid potential discontent and improve user experience.

Solution Paths:

1. Identify the potential stations that have changed in demand
2. Create a model forecasting demand at different stations
3. Create an alert notification that would show stations that are 10 bikes away from reaching maximum capacity or only 10 bikes left at a certain station before it is depleted completely

Measures of Success:

Technical – How off are the numbers the model is forecasting
Non-Technical – Whether there is an oversupply or undersupply of bicycles at the stations

Risks: Inaccurate forecast of demand
Assumptions:

1. The behavior at the station level is predictable
2. Citi Bike is able to implement the changes

Data: Citi Bike Trip Data

Algorithms: Exploratory data analysis and visualizations in Excel and Tableau

Tools:

1. Excel
2. Tableau

Communication:

1. Powerpoint slides
2. Tableau dashboard