FREMONT BRIDGE BIKE PREDICTION

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Final Project : INFO 7390 Advances In Data Science

Overview

Goals

To provide some helpful information - things that we wish we could know - to the general public.

we want a model to predict the bike flow of the Fremont Bridge in 24h of a specific future day.

The future bike flow information will help the government to be well prepared for the upcoming traffic situation of the bridge. With prediction, the police can know what time the traffic will be heavy and then send more police officer to maintain the order of the traffic. Also the information can be shared to the public, so people can decide whether to change their route.

Use Cases

Making transportation more efficient
Predictive models like these are interesting for many people

Daily User: Change the schedule or route to avoid traffic jam

Government: Transportation operation optimization and Police dispatch optimization

Data

1. **Bike Data**: https://data.seattle.gov/Transportation/Fremont-Bridge-Bicycle-Counts-by-Month/mdbt-9ykn
2. **Weather Data:**https://www.kaggle.com/selfishgene/historical-hourly-weather-data#temperature.csv

   We will use the recent 5 years data to build the model.

Process Outline

1. Data Preprocessing
    - Data Cleaning, handling missing values
    - Join the bike data with the weather data
2. Exploratory Data Analysis
3. Study of Supervised approaches and select the best model for prediction
4. Study of Unsupervised approaches (Clustering and Associative rule mining) for recommendation

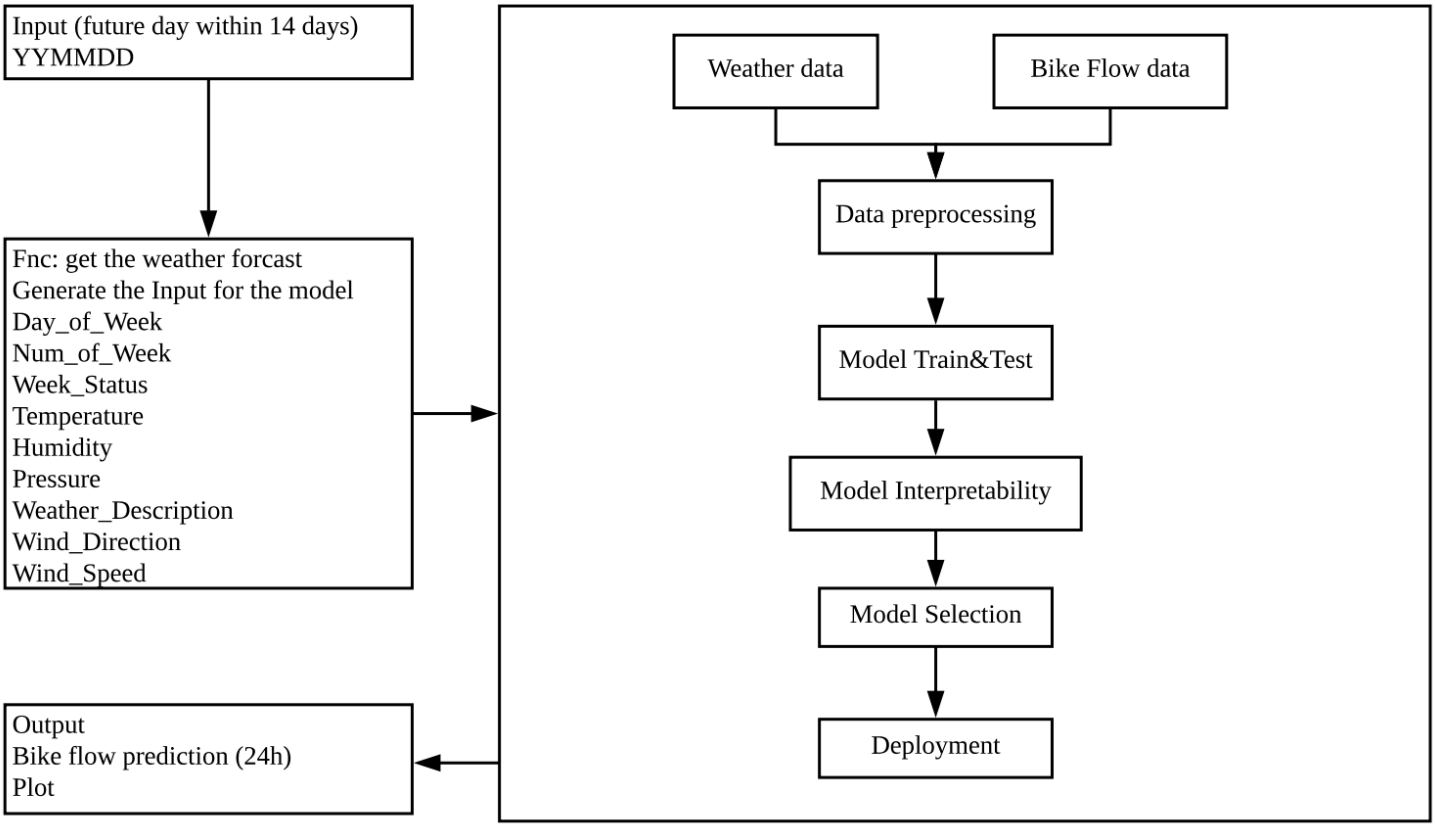
5. Use the lime or skater to understand the model and decide the best model to deploy

6. Deploy the Model on Pi-Py as a package

Milestones

Timeframe	Delivery
Day 1-2	Data Preprocessing and Exploratory Data Analysis
Day 3-6	Model Building, Training, Testing
Day 7-8	Model Interpretability and Selection
Day 9-10	Model Deployment

Implement Details:



Reference:

https://github.com/DataScienceWorks/PredictingBicycleTraffic