

Forecasting Customer Demand

SUNY Buffalo State College
Data Science & Analytics Program
Professional Lab
Fall 2020 Semester



2021-01-25

Business Problem

- Research and create a range of customer purchasing forecasts to be used by the Network Design and Modeling team for the US/Canada supply chain
- Using a range of forecasts will allow the modeling team to stress test various scenarios against potential forecasts and produce a range of results which will be presented to business leaders



About the Models & Project

Random Forest Regression

- Shown in **red** throughout the dashboard
- Separate model for each of the 3 biggest customer groups

Error Rates Root Mean Square Error:

- Customer 1: 22.28
- Customer 2: 49.04
- Customer 3: 47.75

XGBoost

- Shown in **yellow** throughout the dashboard
- One model run for the entire dataset

Error Rates RMSE: 11.44

About the Project

The original data that the models were trained on spanned from March 2017 to October 2020. Sorted by date, the first 60% of the data was used to train and validate the data. The final test set that is displayed in this dashboard is the most recent 40% of the data. All models were run during the fall 2020 semester by the Buffalo State Professional Lab student team.



Date

All

Location

All

Product

Multiple selections

Customer

All

Item Category

All

Material Group

All

Incoterms

All

Ship To

All

Source Plant

All

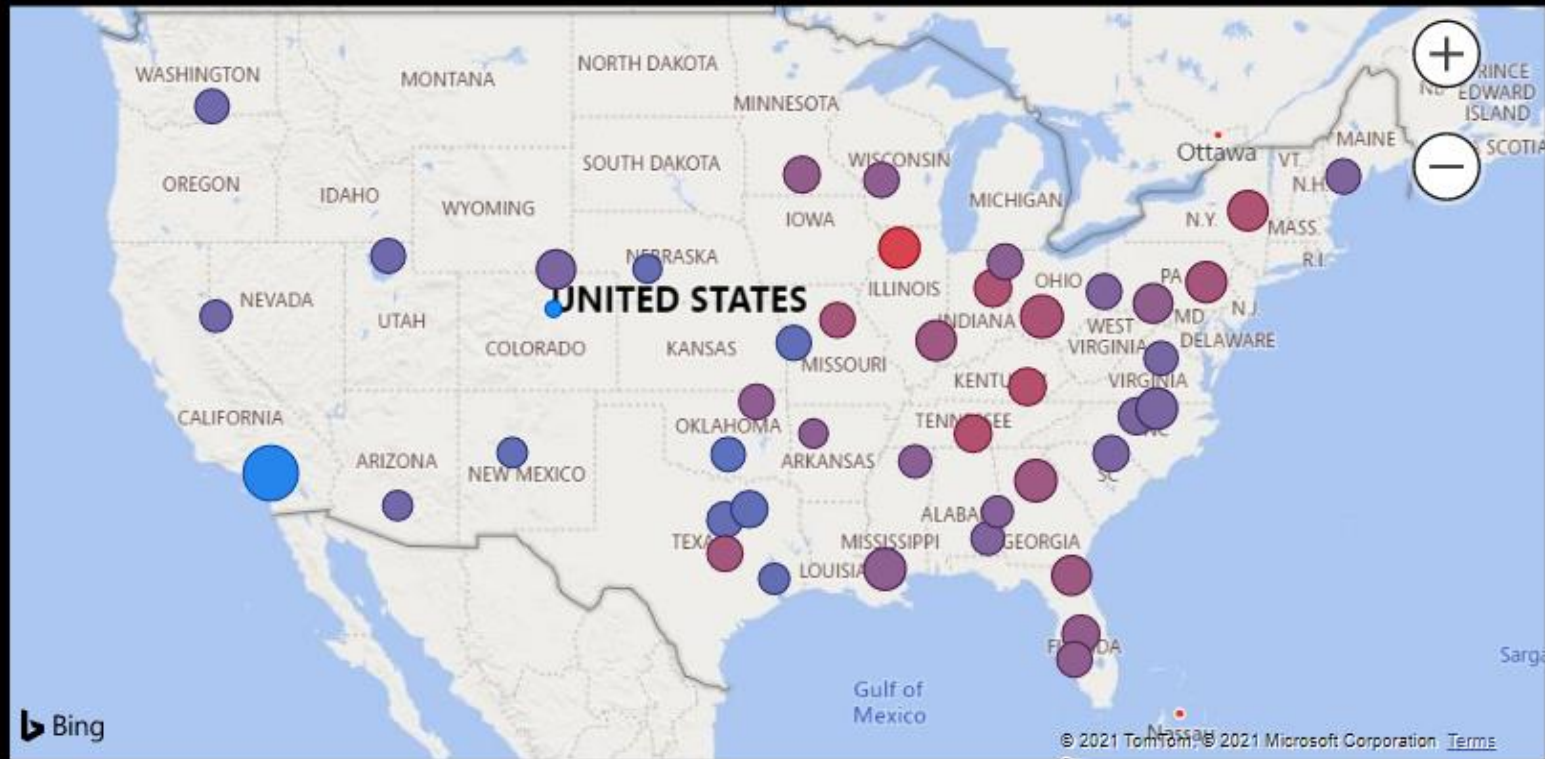
Sales Division

All

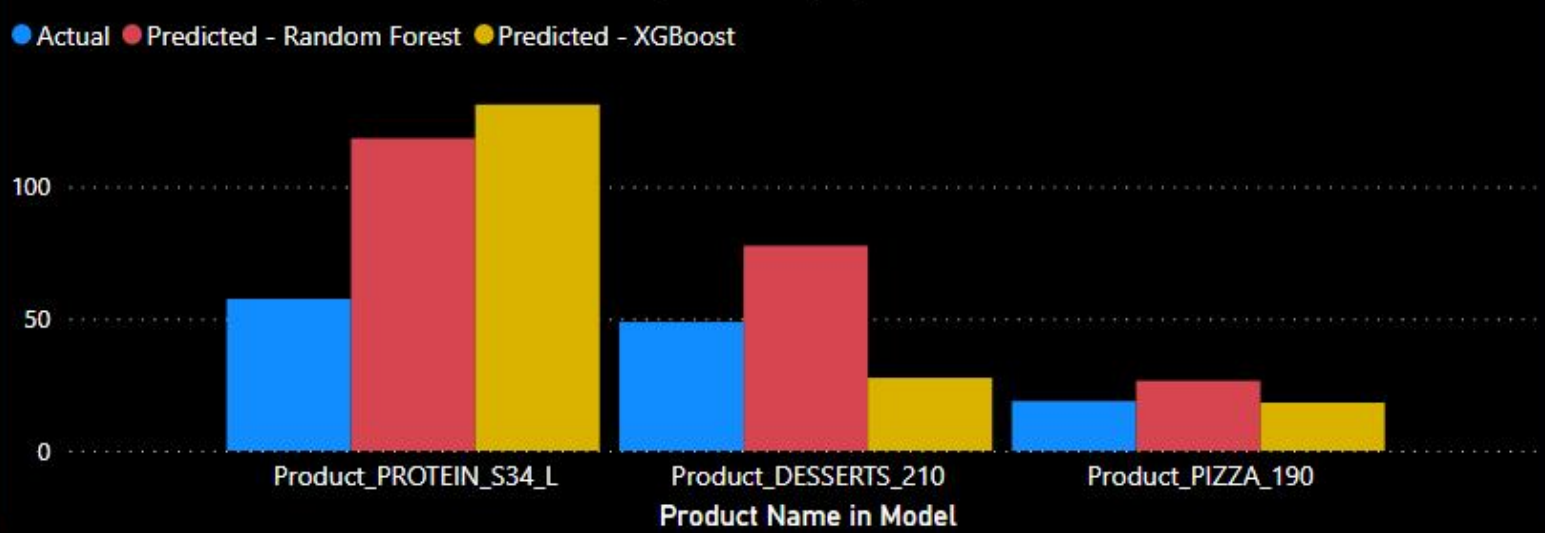
Sales Org

All

Delivery Quantity by Location



Delivery Quantity by Product



Date

All

Location

All

Product

Multiple selections

Customer

All

Item Category

All

Material Group

All

Incoterms

All

Ship To

All

Source Plant

All

Sales Division

All

Sales Org

All

Prediction Timeline

