

A glass of red cocktail with a black straw and a citrus garnish.

Keeping It Fresh!

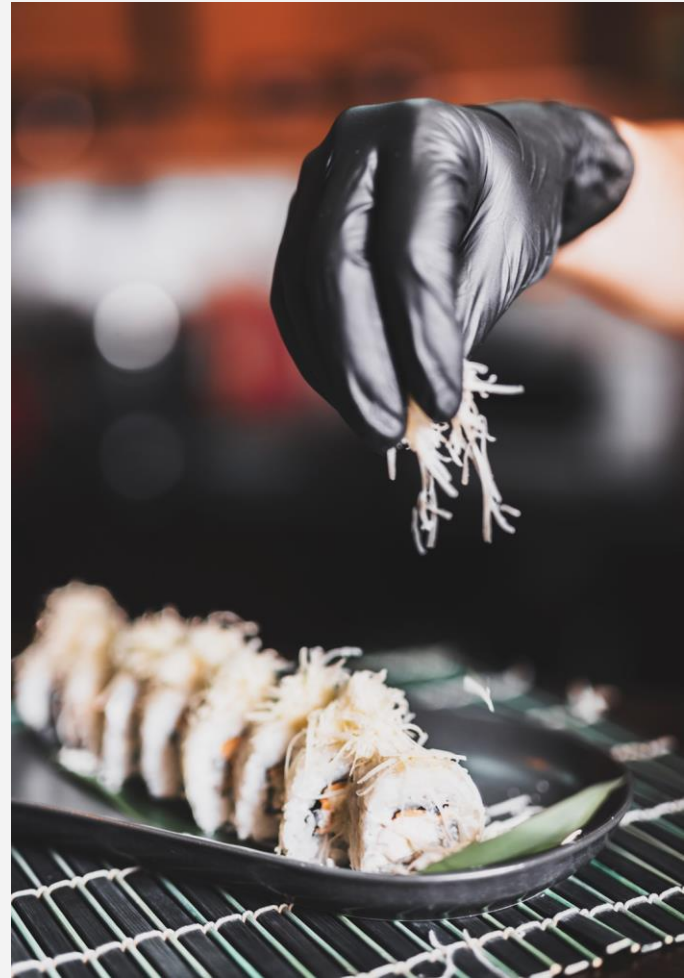
Prioritizing restaurant
health inspections using
Data Science

Presented by Navish Agarwal

Motivation

Restaurant Inspectors:
Limited resources

Prioritize:
Repeat offenders
Crowd-source Info



Project

Methodology



Prediction

Latest Inspection - Target

Pass: 1 Fail: 0

Project

Methodology



Prediction

Latest Inspection - Target
Pass: 1 Fail: 0



Data

Historical Inspections
& Yelp

Project

Methodology



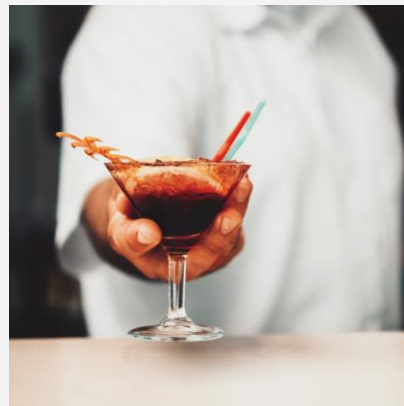
Prediction

Latest Inspection - Target
Pass: 1 Fail: 0



Data

Historical Inspections
& Yelp



Caveats

Only > 2 Inspections

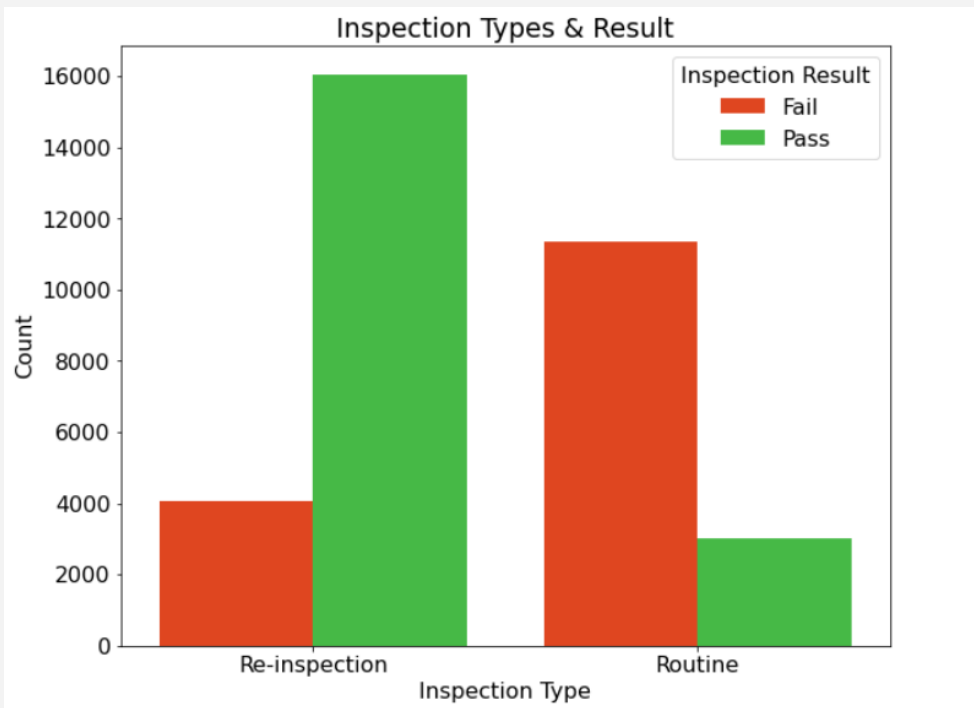
Most Interesting Insight



Re-inspection:

Inspected in < 90 Days
Since Last Inspection

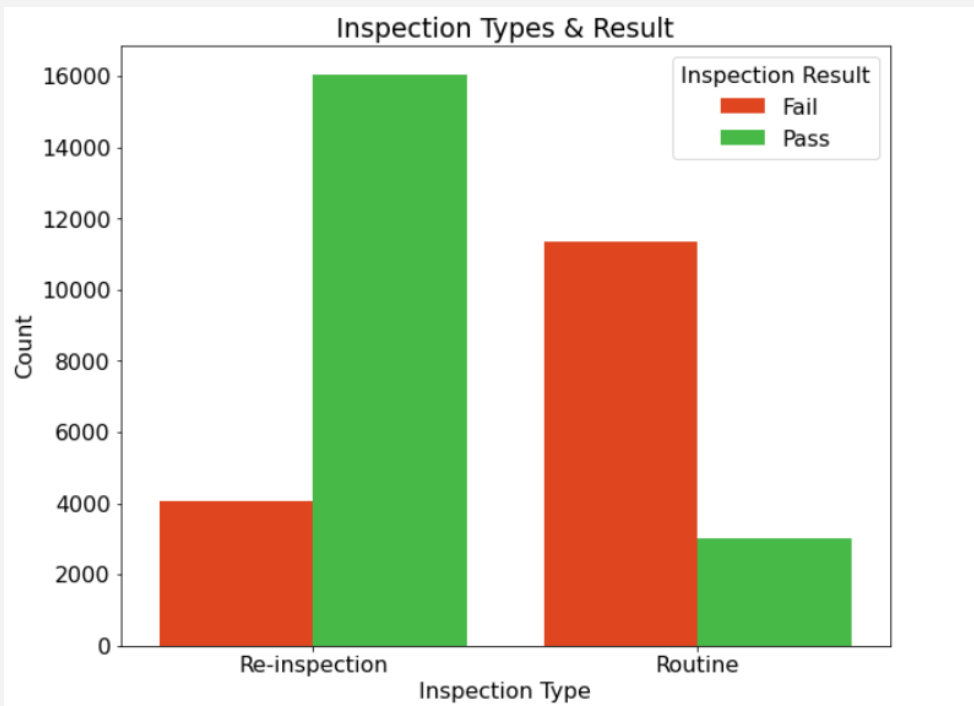
Most Interesting Insight



Re-inspection:

Inspected in < 90 Days
Since Last Inspection

Most Interesting Insight

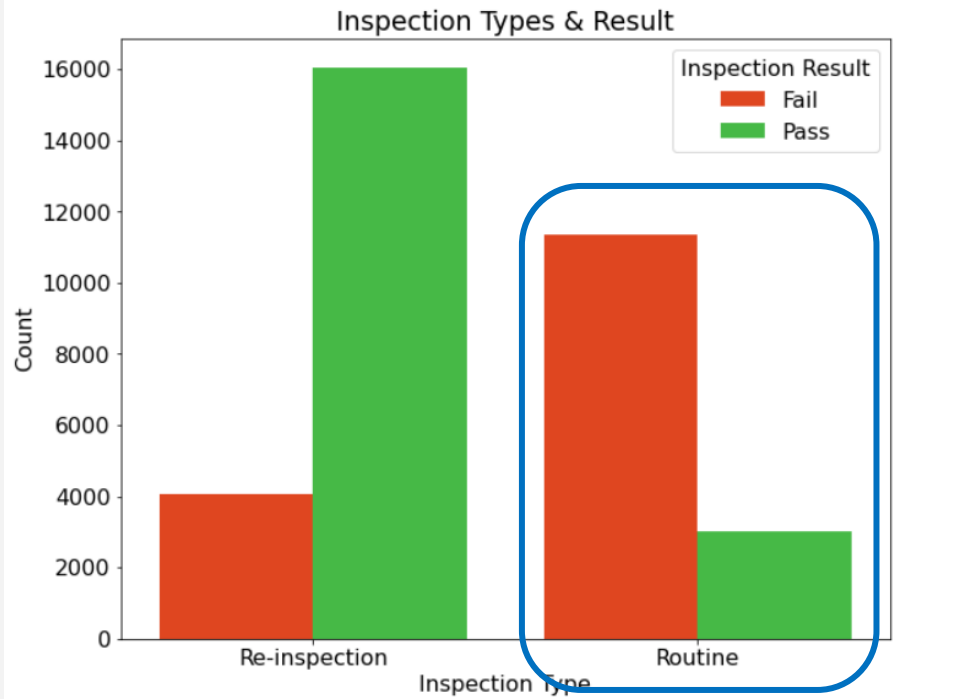


Re-inspection:

Inspected in < 90 Days
Since Last Inspection

*What if no
Inspections!?*

Most Interesting Insight



Re-inspection:

Inspected in < 90 Days
Since Last Inspection

*What if no
Inspections!?*

The Results



Logistic Regression

F1 Score

Pass: 0.39

Fail: 0.76

AUC: 0.63

The Results

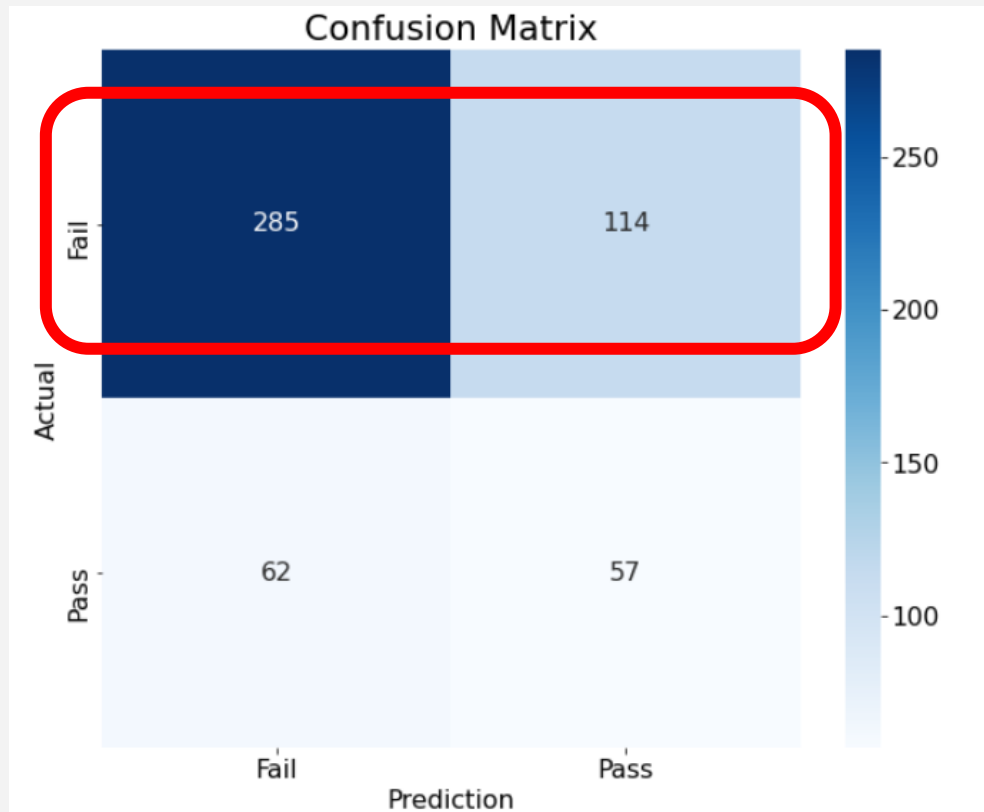
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The Results

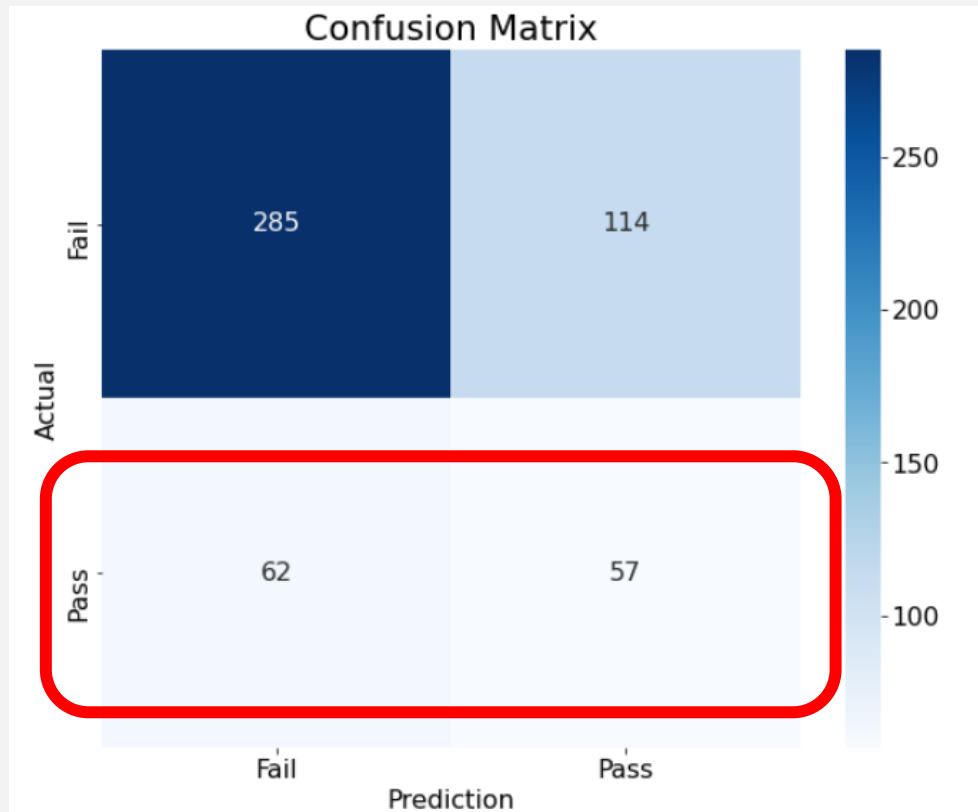
Logistic Regression

F1 Score

Pass: 0.39

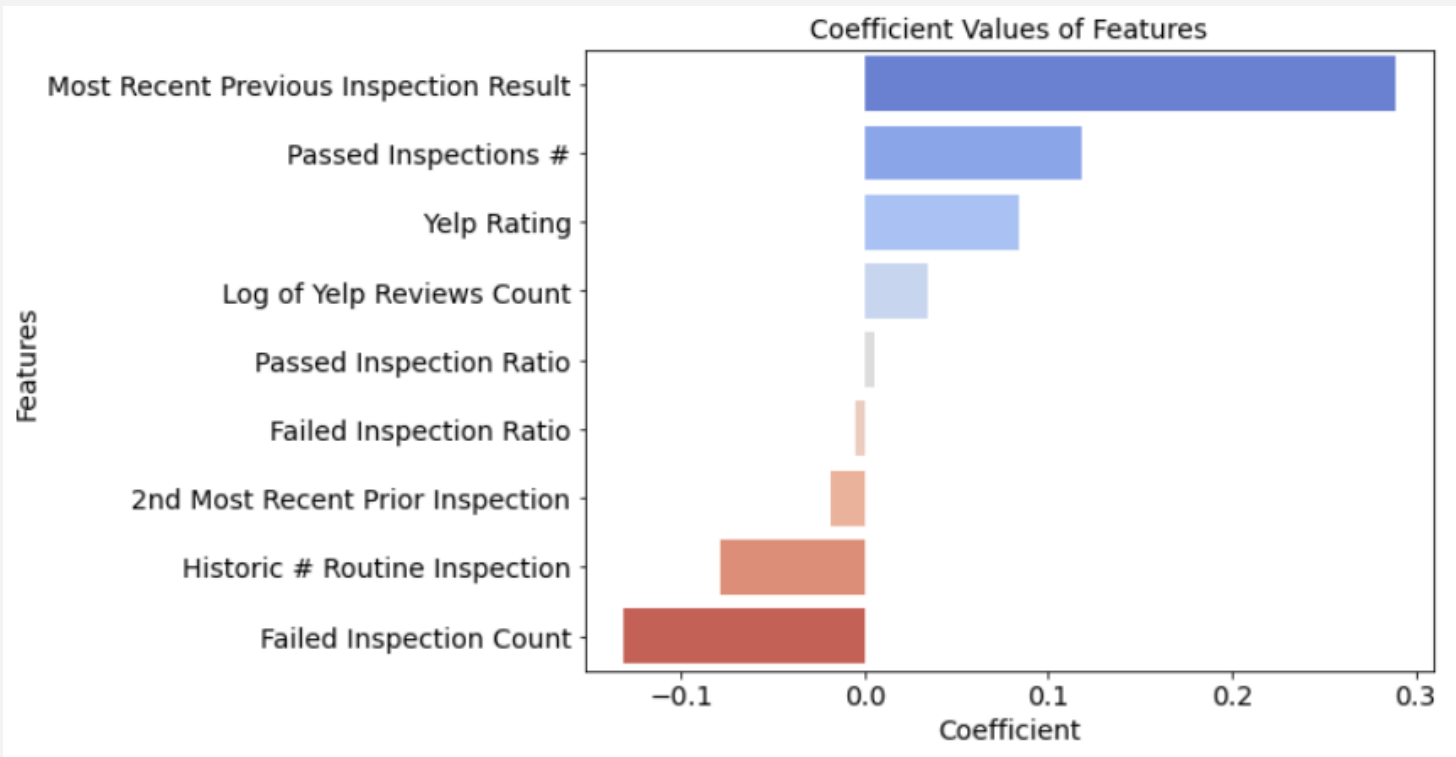
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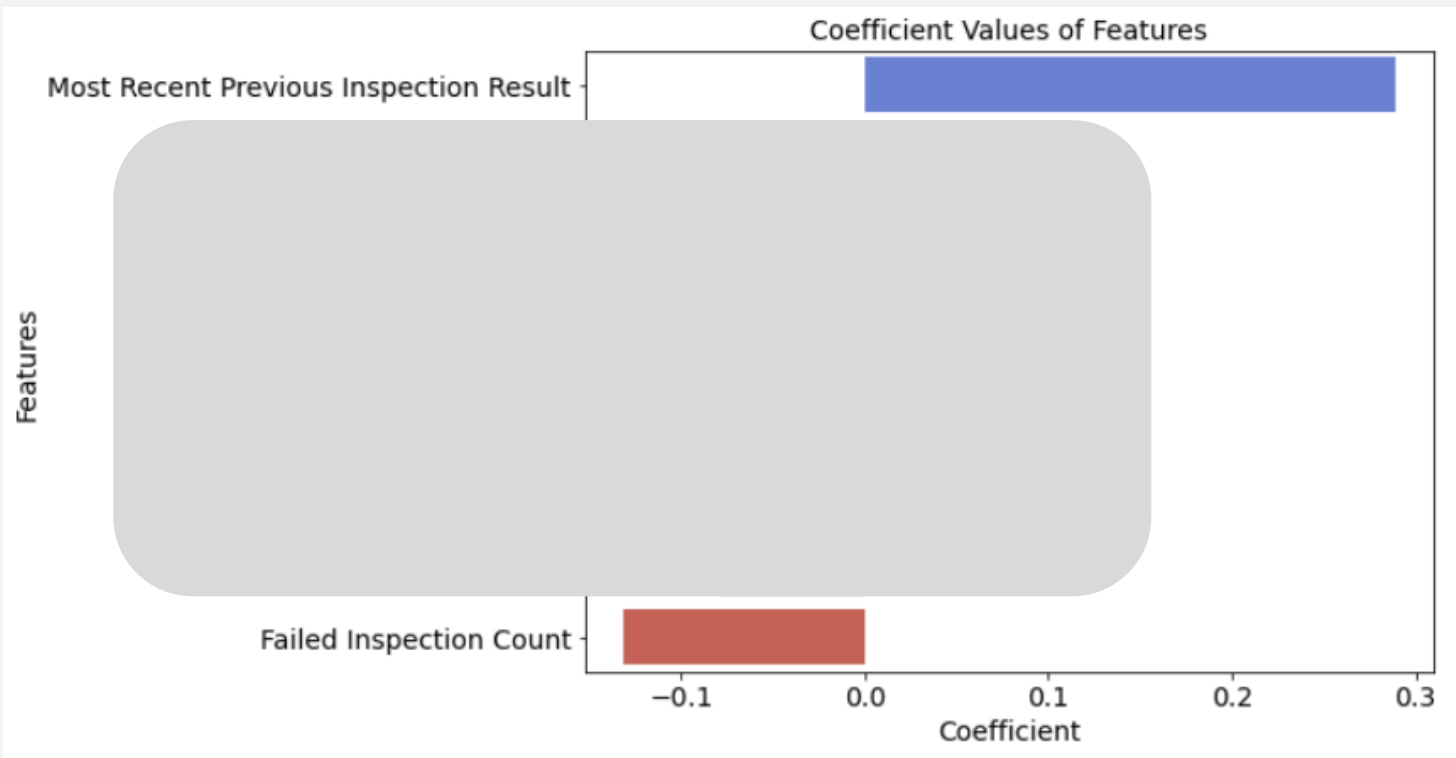
Features

Logistic Regression



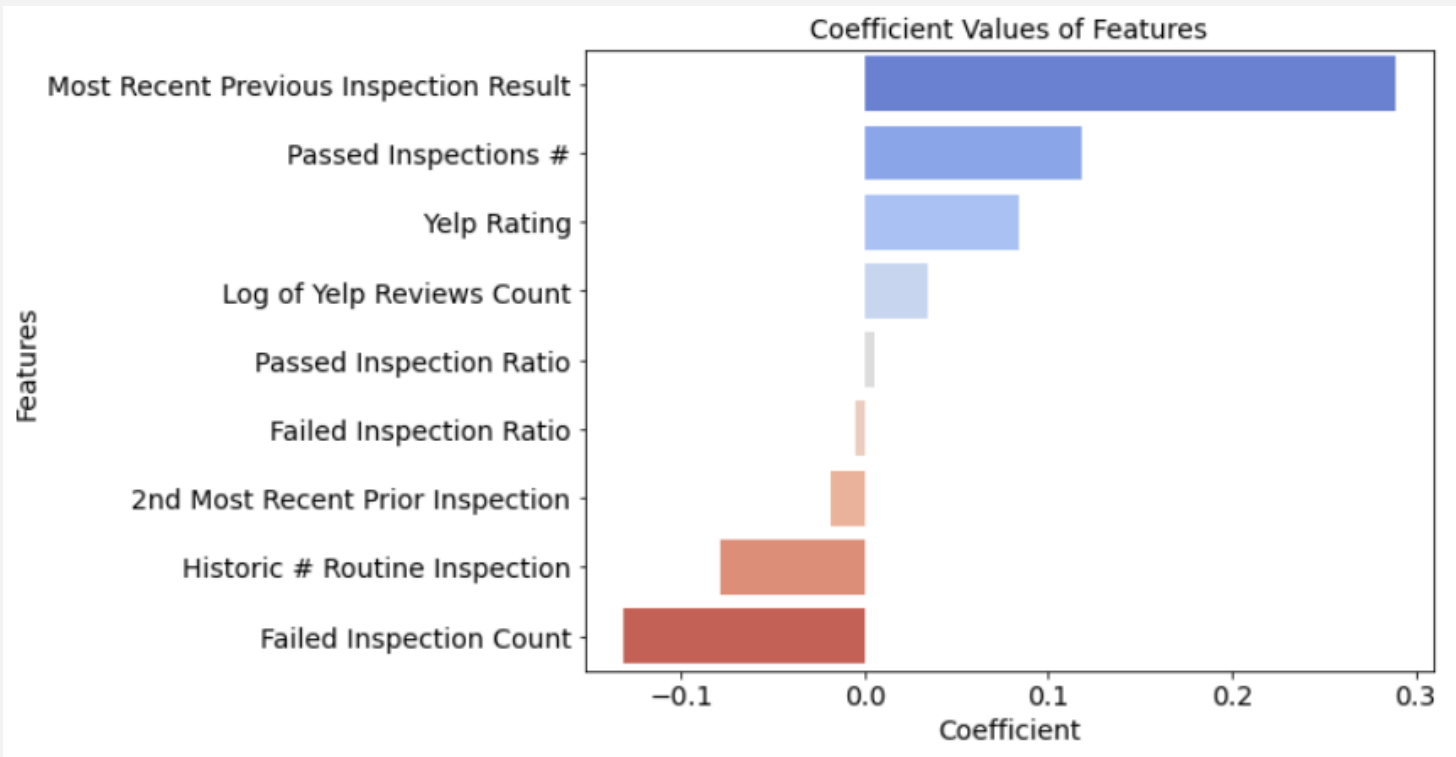
Features

Logistic Regression



Features

Logistic Regression



inspection_prediction_streamlit · x

+

localhost:8502

🔍

☆

ABP

⚙️

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⋮

✕

Boston Restaurant Inspections

Prediction

Please select a section

☒ Predict

☐ Explore Data

Created by Navish Agarwal

Restaurant Inspection Prediction

Welcome!

This webpage predicts the outcome of a restaurant's health inspection.

Just select the correct values below to **predict the outcome!**

Number of Past Inspections

5

-

+

Number of Successful Past Inspections

3

-

+

Result of Most Recent Inspection

☒ Pass

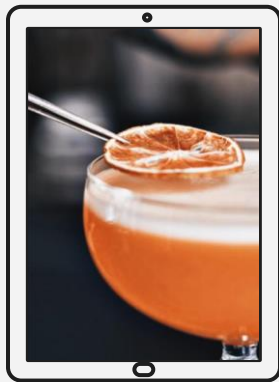
☐ Fail

Result of Inspection Prior to last

☒ Pass

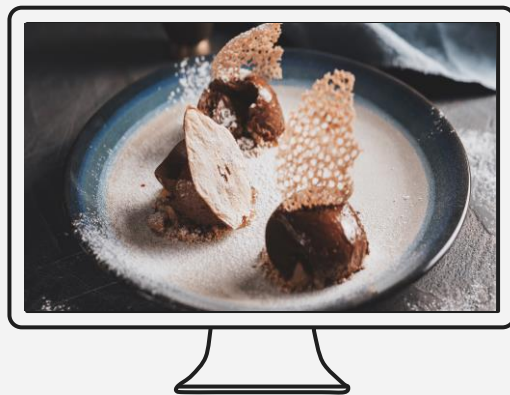
☐ Fail

To Go



Vitality

Inspections crucial to
keep population healthy



Predictability

'Pass' targets not captured
well — underlying pattern
missing



Future Steps

Model for restaurants
with no prior inspection
& Parse Yelp Reviews

THANKS

A close-up photograph of a bartender's hand pouring a vibrant orange liquid from a silver shaker into a tall, slender glass. The glass already contains a white straw with a blue and green palm tree decoration, a slice of orange, and a cinnamon stick. The background is blurred, showing the bartender's white shirt and a dark, out-of-focus area.

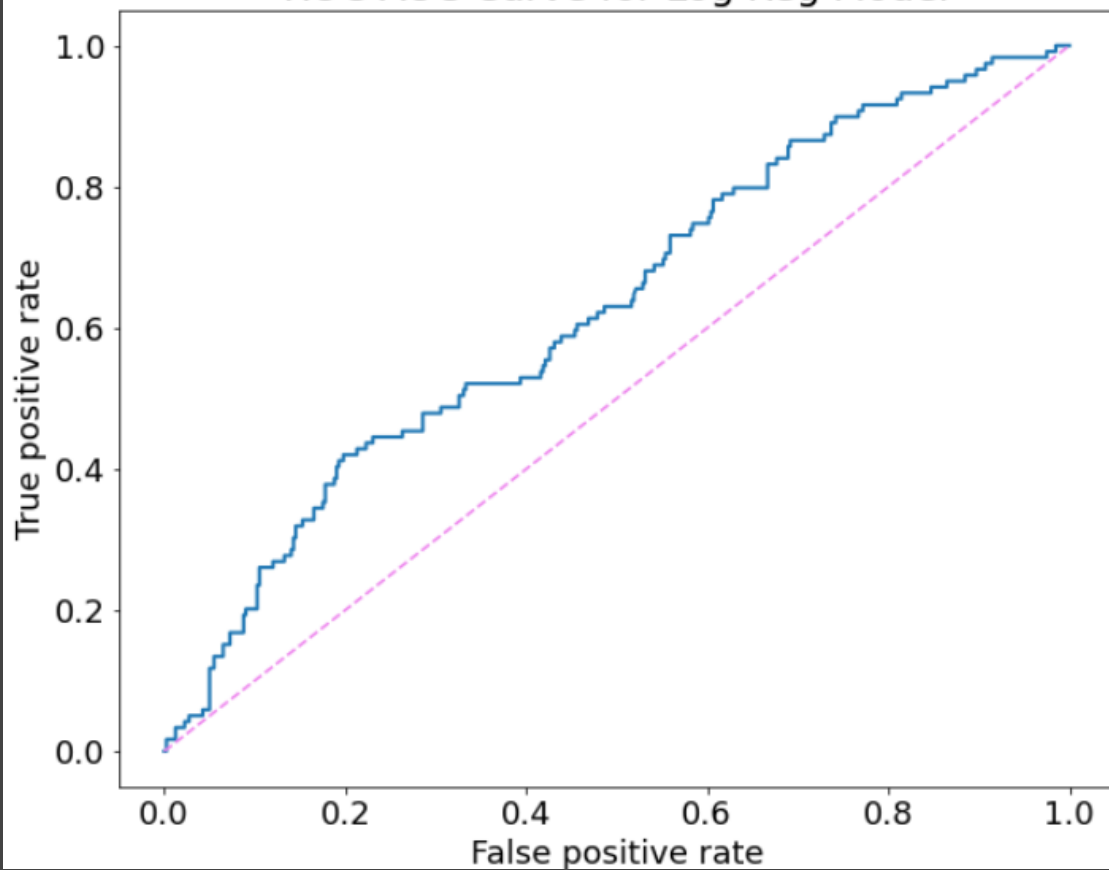
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ROC AUC Curve for Log Reg Model



Prediction Probability Distributions

