




# Food Inspections For the Ordinary

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by **FiFo** Inc.





# My Domain Knowledge

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# Inspection Grade

A

B

C

# The Problem & Proposed Solution

Restaurant health inspection records are public but often stored in difficult-to-navigate formats, making it hard for customers to access crucial information about prior violations. My goal with **FiFo** is to present this data in a clear, engaging way to help people make informed dining choices.

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## App



Visualise  
Inspection  
Information

## Model

Predict Inspection  
Result

```
graph TD; A[App: Visualise Inspection Information] --- B[Goals]; M[Model: Predict Inspection Result] --- B;
```

Goals



“Encourage people to make  
more educated & healthier  
choices on things which may  
impact their health and  
well-being greatly.”

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Objective of **FiFo**<sup>Inc.</sup>





# 01

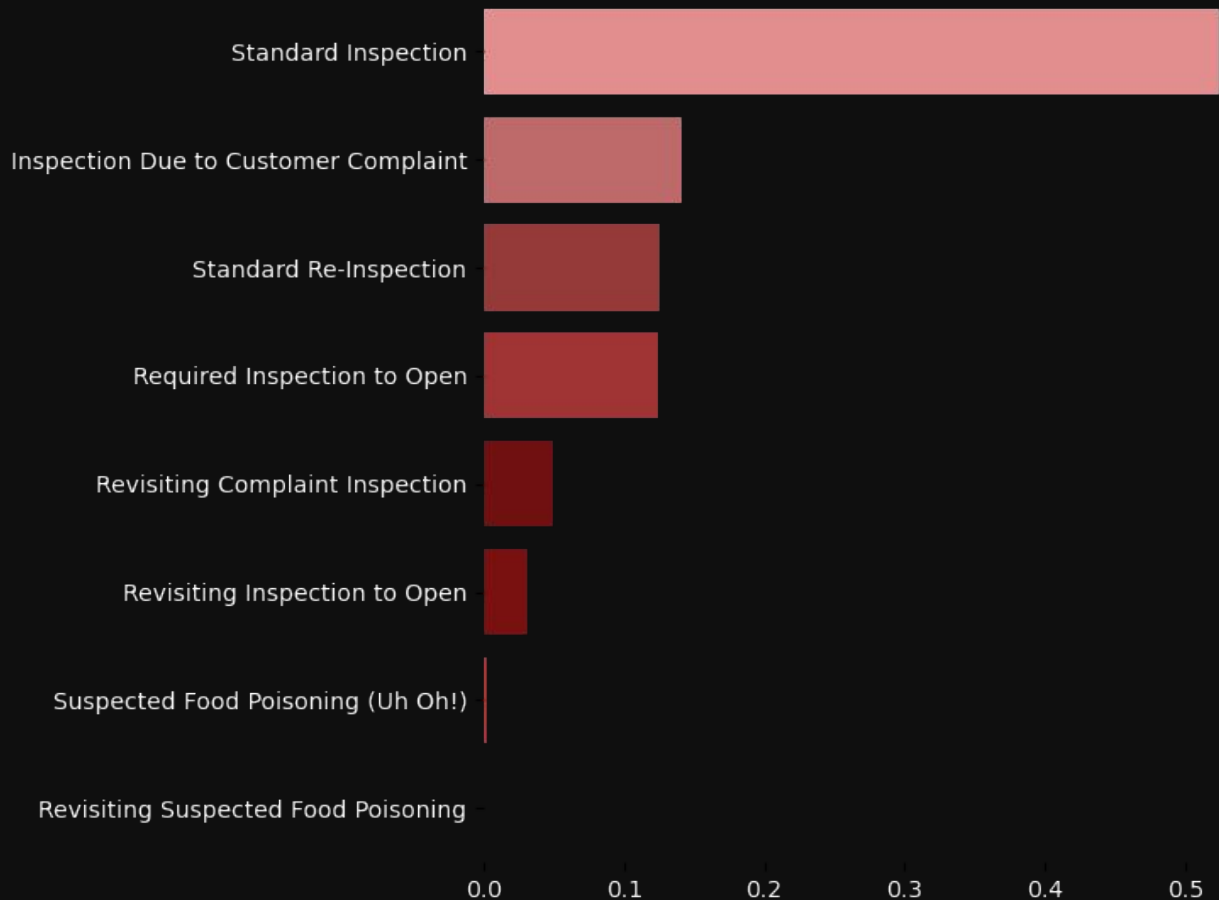
## The Data

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Exploring, cleaning, and visualising  
the **Chicago Food Inspections**  
dataset.

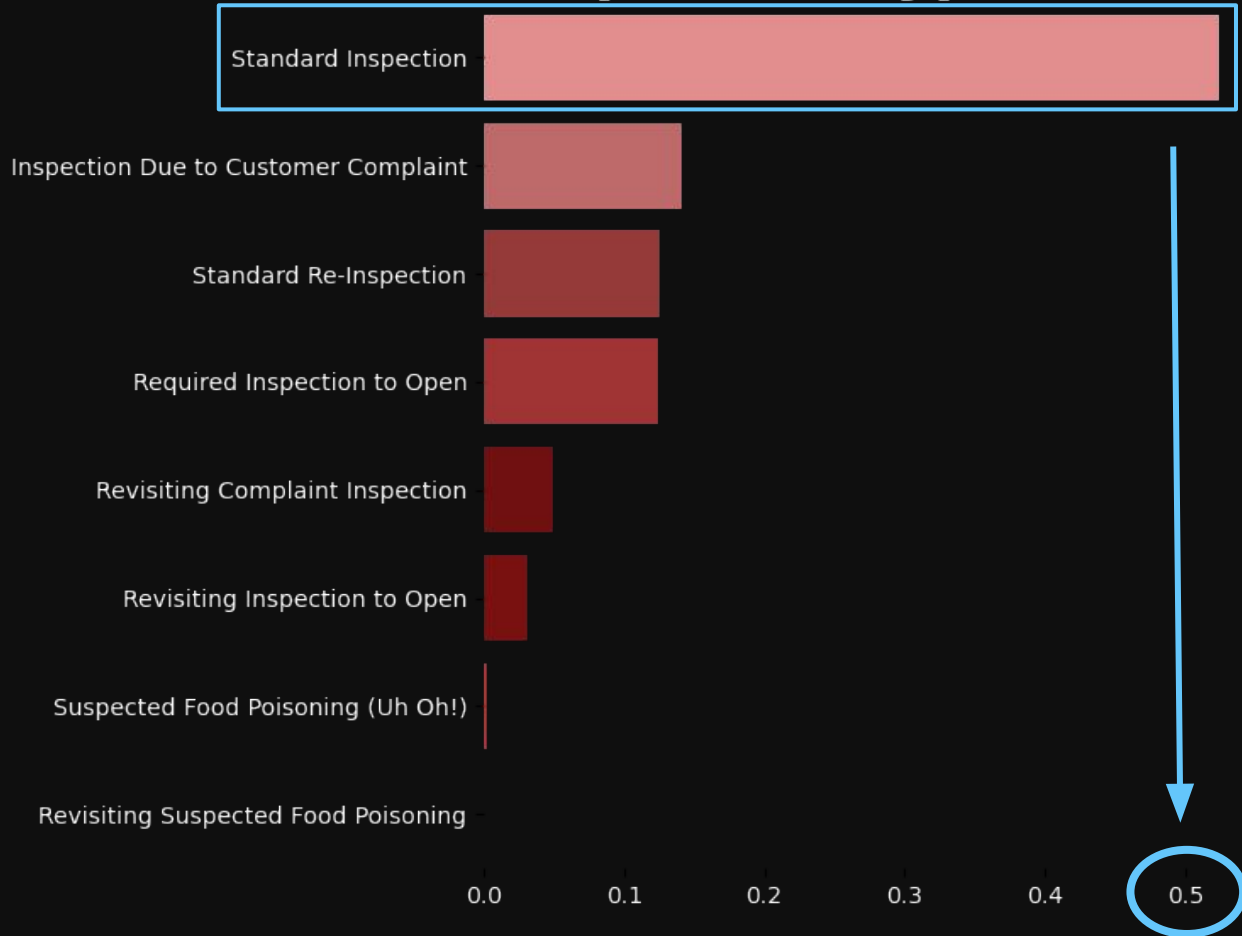
# Inspection Type Ratios

Inspection Type



# Inspection Type Ratios

Inspection Type

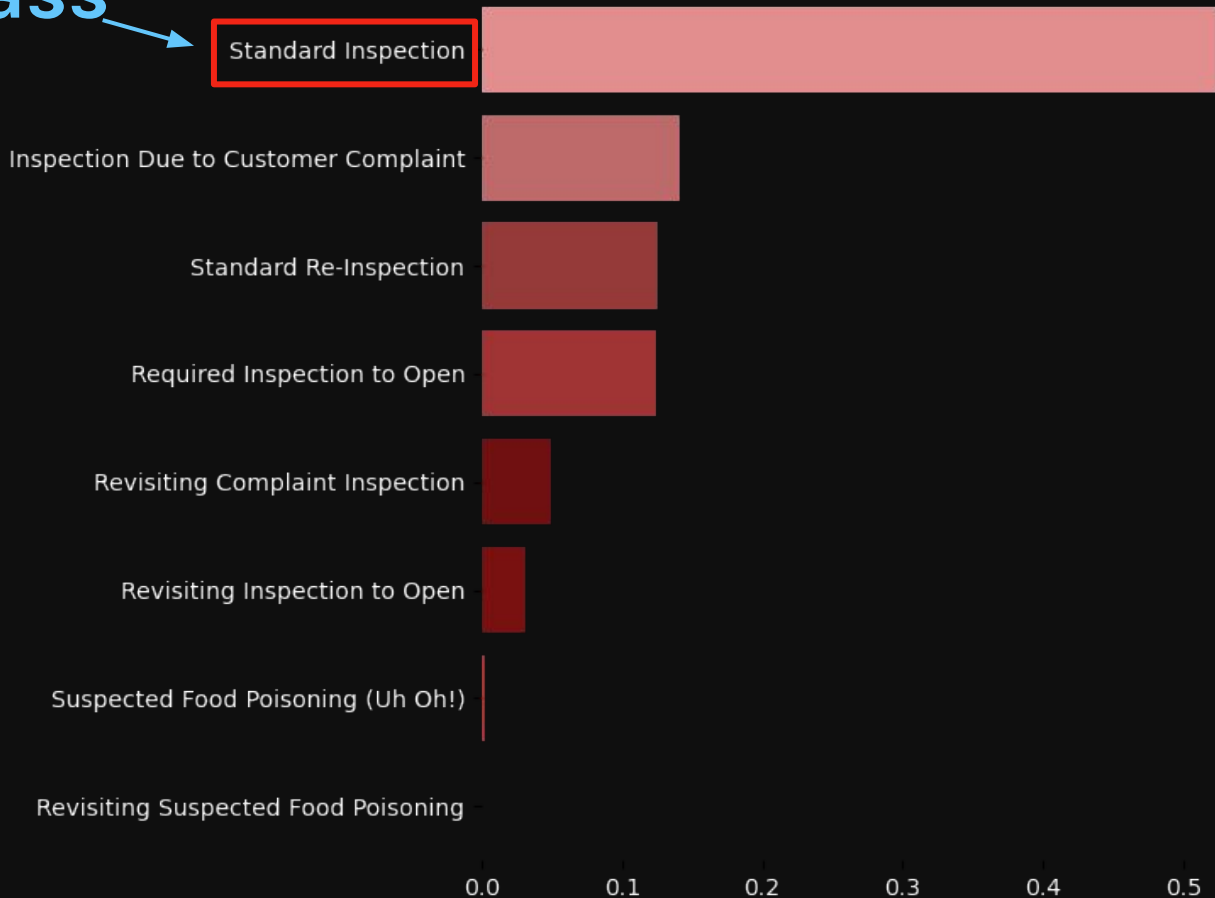




Canvass

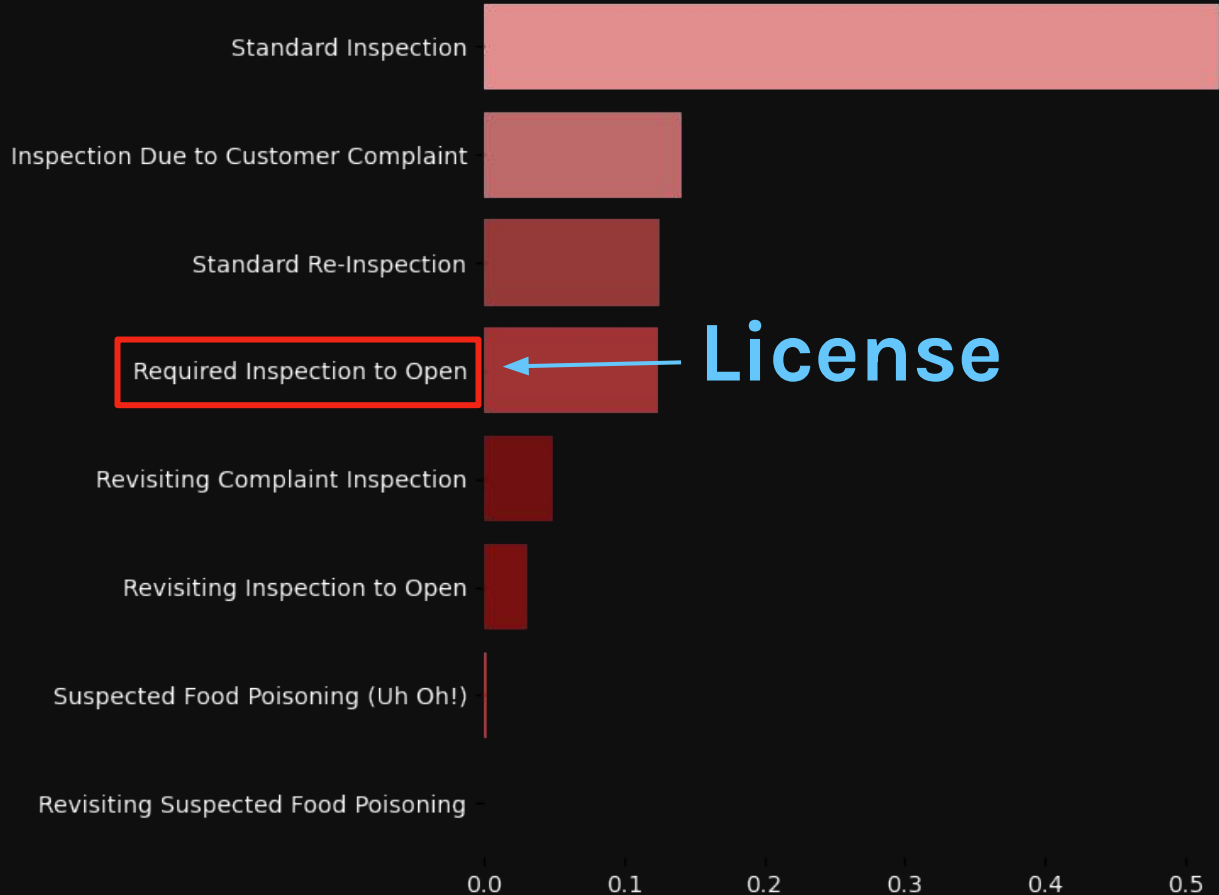
## Inspection Type Ratios

Inspection Type



# Inspection Type Ratios

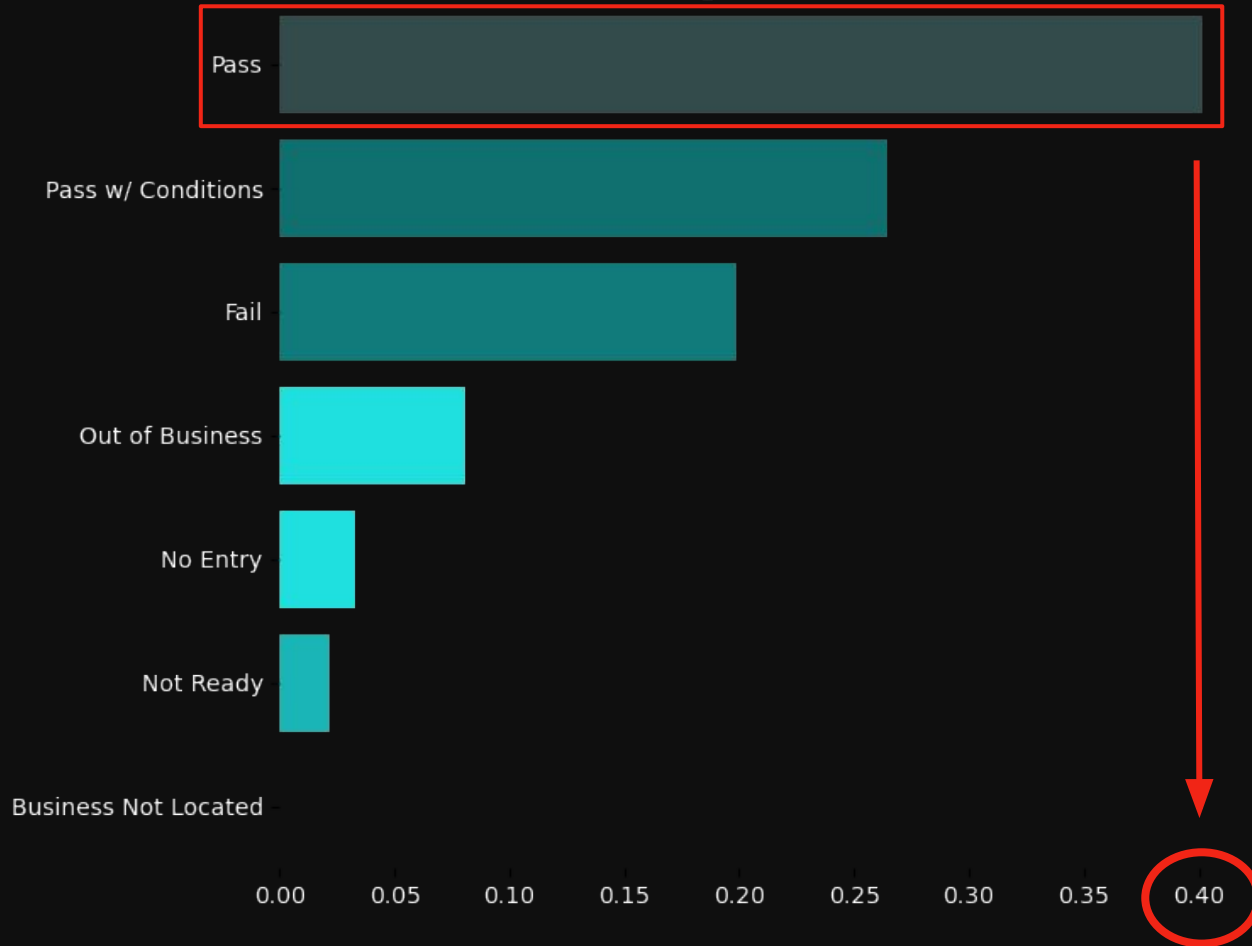
Inspection Type



License

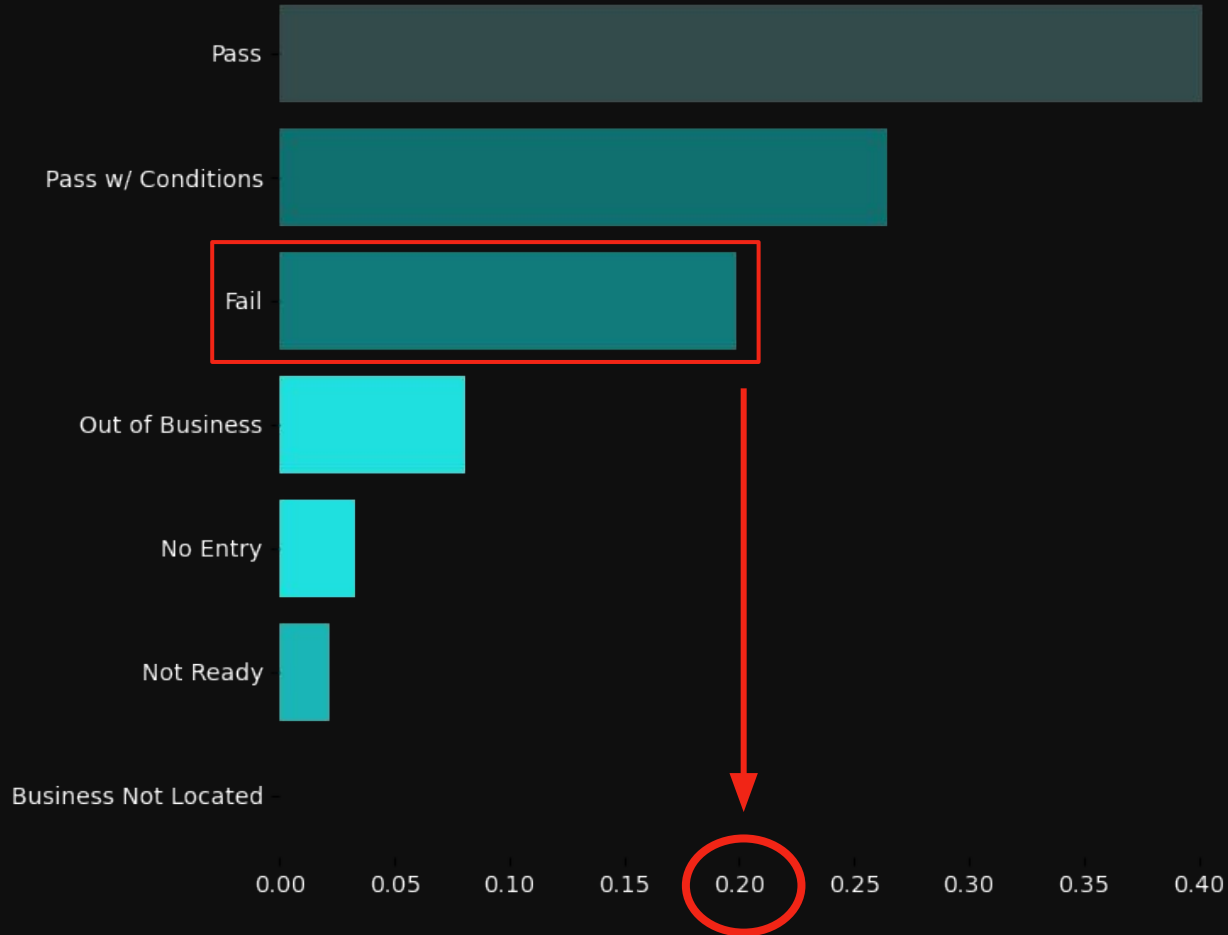
# Ratio of Inspection Results

Result



# Ratio of Inspection Results

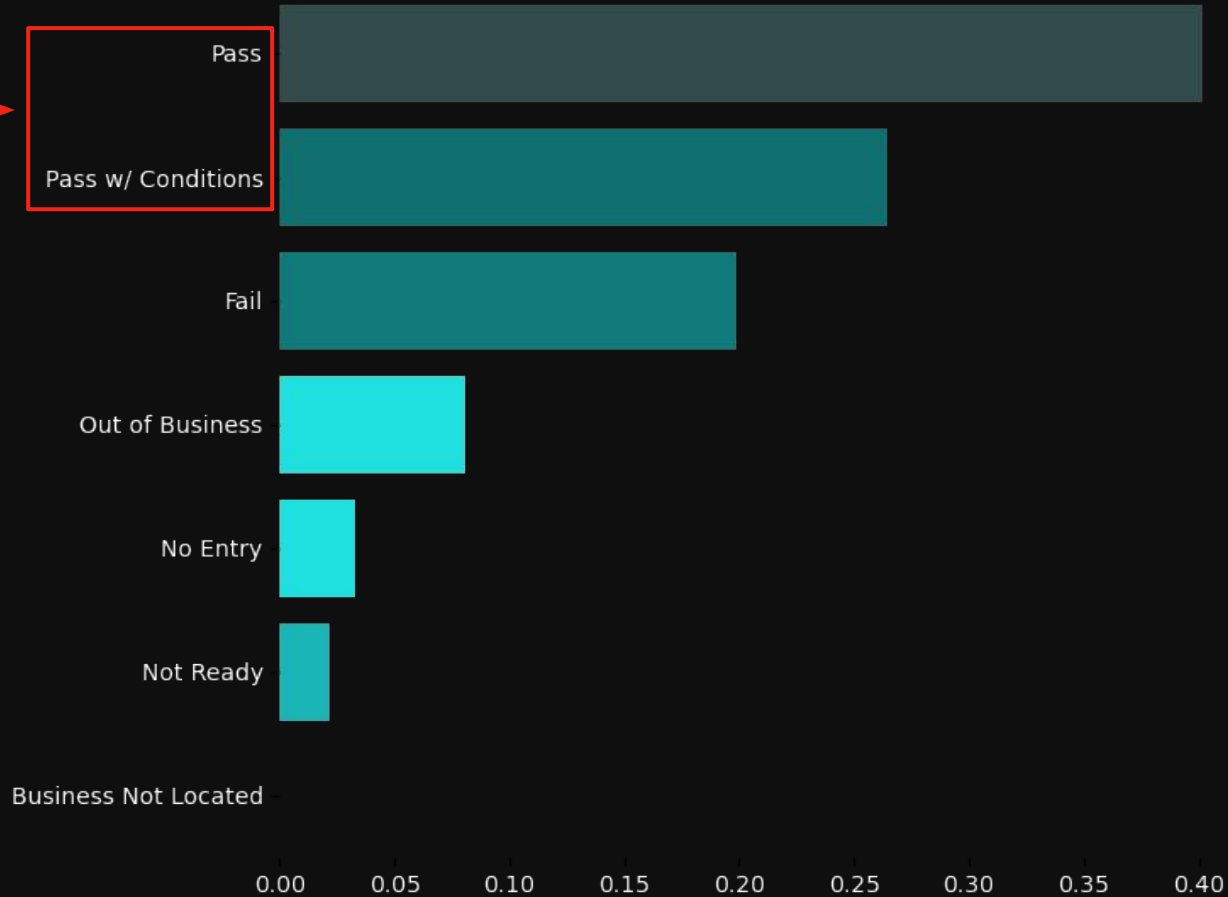
Result



# Ratio of Inspection Results

Combined →

Result



# Ratio of Inspection Results

Result

Pass  
Pass w/ Conditions  
Fail  
Out of Business  
No Entry  
Not Ready  
Business Not Located

0.00 0.05 0.10 0.15 0.20 0.25 0.30 0.35 0.40

Removed →





# Designing New Features

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# Violation Count - First vs. Second Visit

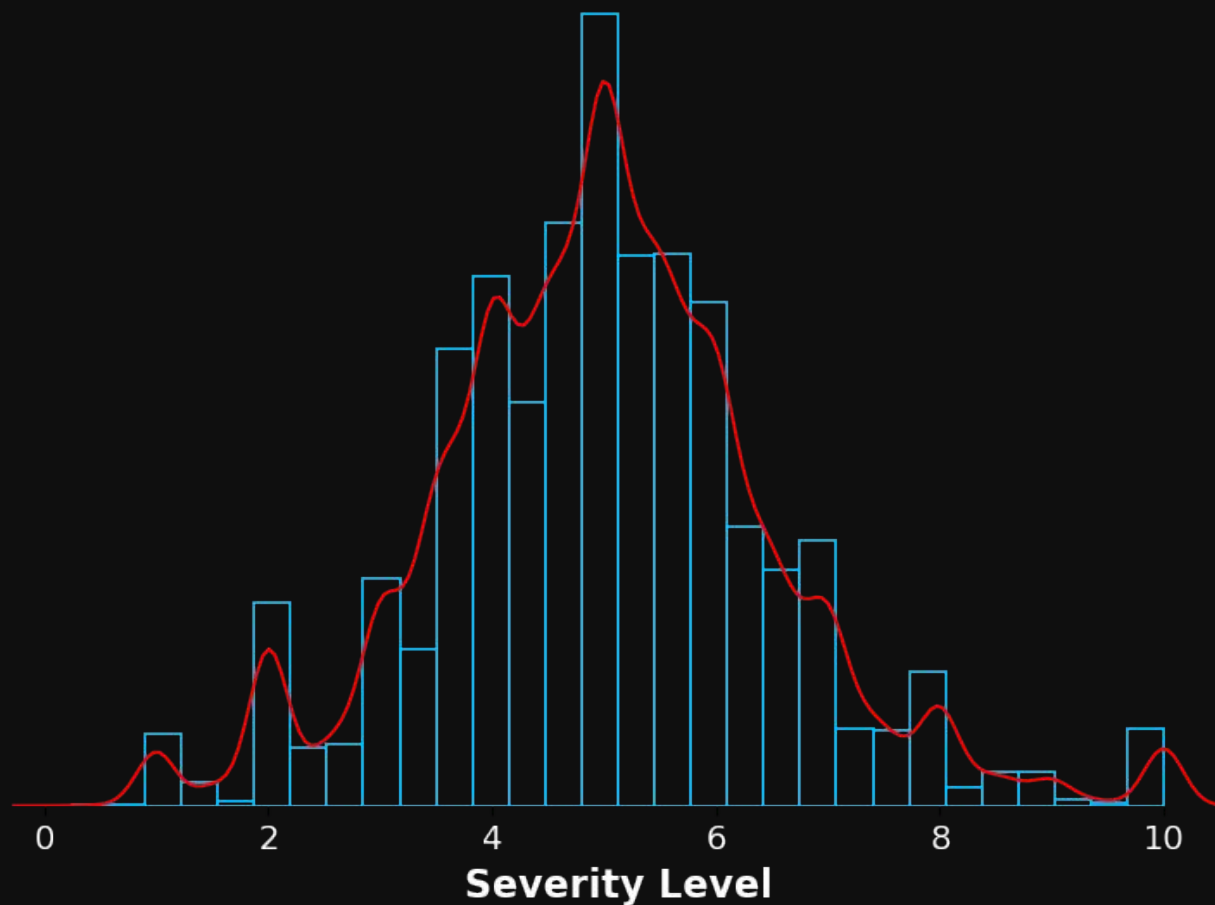




# Violation Count - First vs. Second Visit



# Distribution of Average Severity Levels





# 02

## The Model

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Predicting inspection results of  
Chicago restaurants.



# Logistic Regression

Binary Classification - **Pass** / **Fail**





# Logistic Regression

Binary Classification - **Pass** / **Fail**

## Interpretability

Allow restaurant owners to understand the factors  
influencing inspection outcomes



# Logistic Regression

Binary Classification - **Pass** / **Fail**

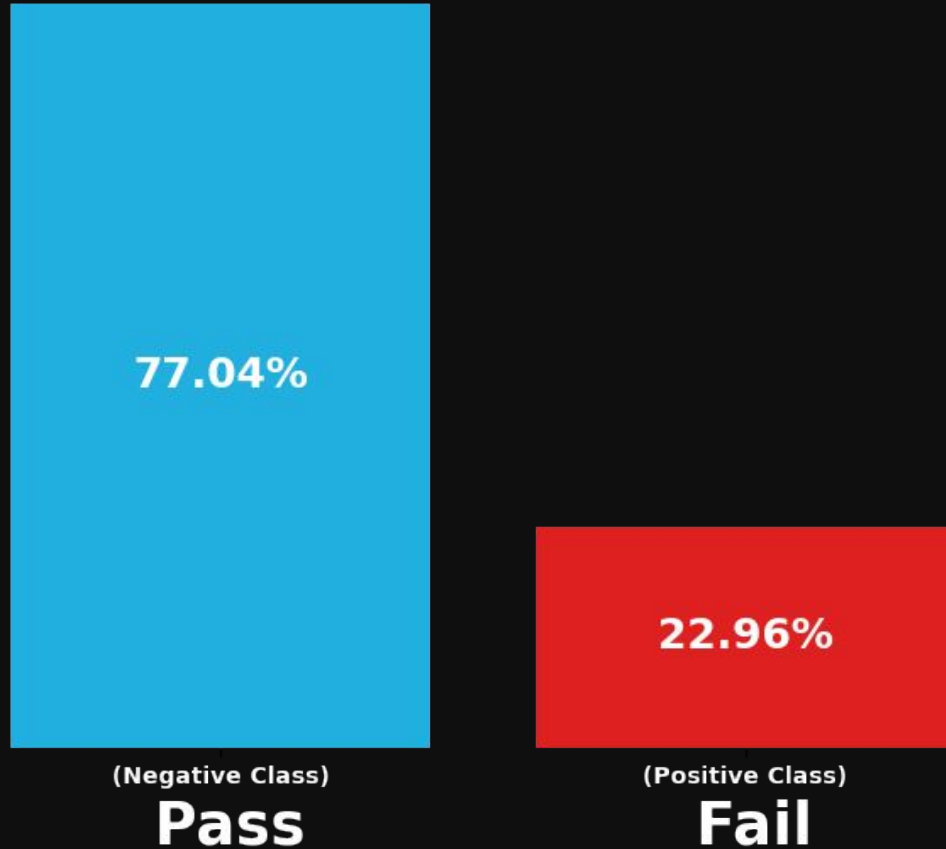
## Interpretability

Allow restaurant owners to understand the factors  
influencing inspection outcomes

## Recall

Minimize the risk of missing critical inspection failures

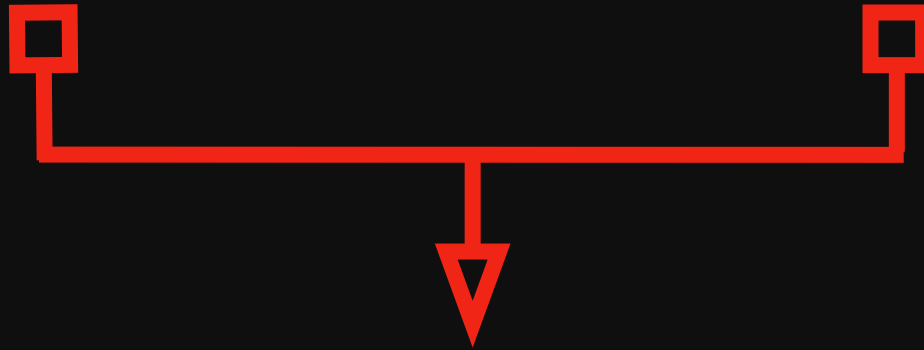
# Class Balance



# Pipeline

Standard Scaler

One Hot Encoder



Logistic Regression



# Model Results

Iterations	Accuracy	Precision	Recall	F1
First	87%	76%	60%	67%

# Model Results

Iterations	Accuracy	Precision	Recall	F1
First	87%	76%	60%	67%
Second	86%	67%	77%	71%



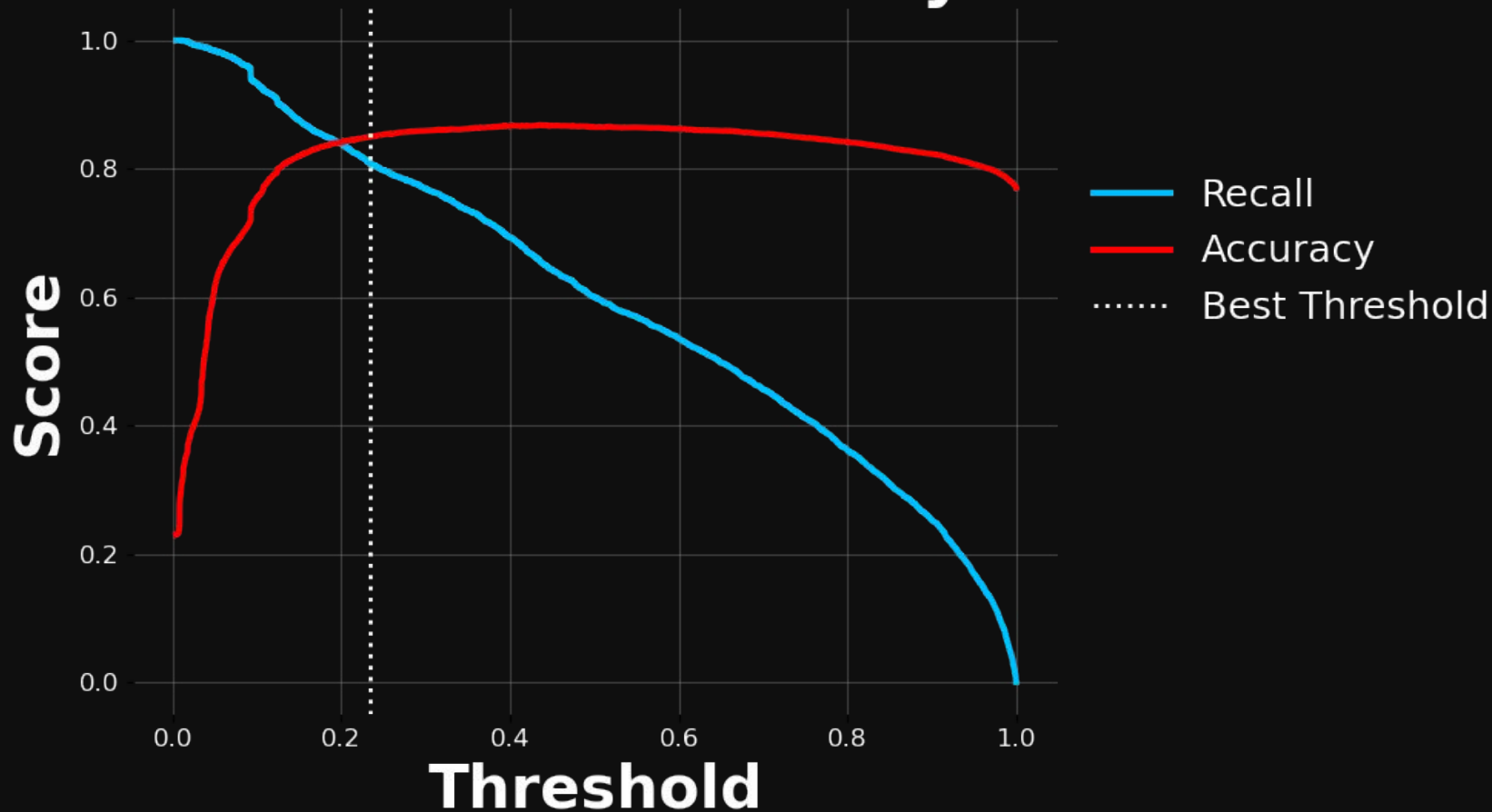
# Model Results

Iterations	Accuracy	Precision	Recall	F1
First	87%	76%	60%	67%
Second	86%	67%	77%	71%
Third	85%	64%	81%	71%

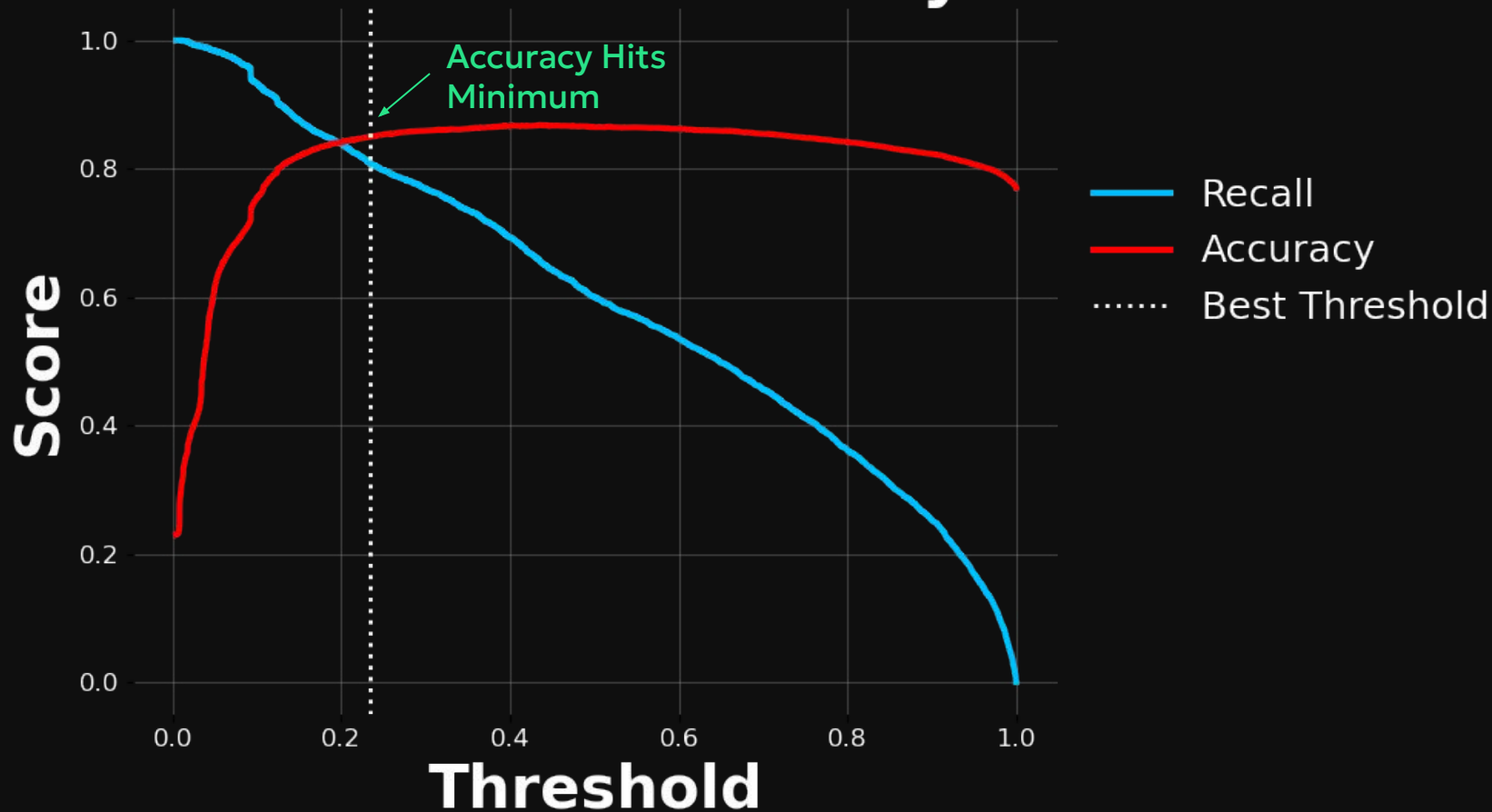
# Model Results

Iterations	Accuracy	Precision	Recall	F1
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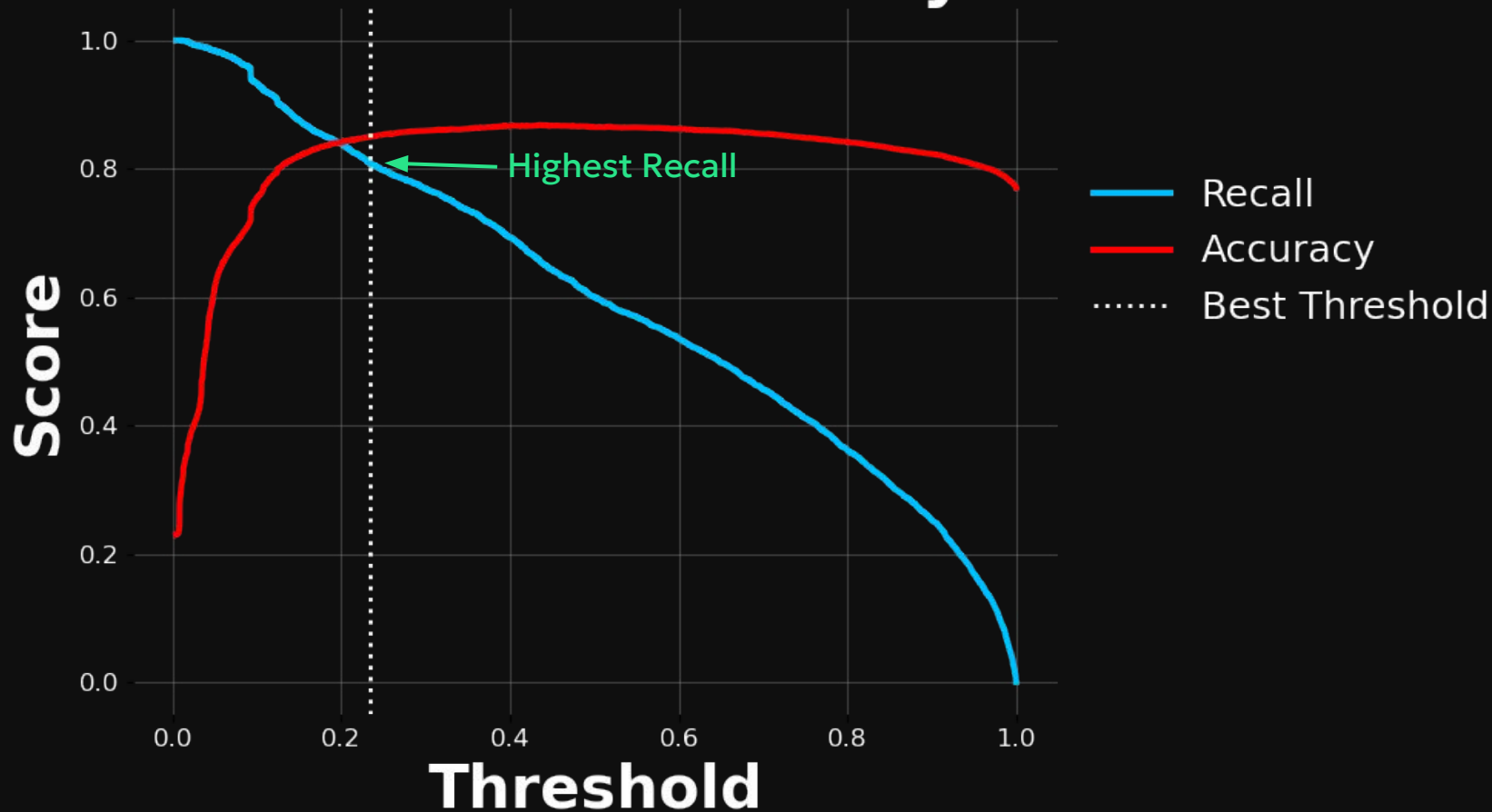
# Recall vs. Accuracy



# Recall vs. Accuracy



# Recall vs. Accuracy





# Model Conclusion

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# Model Conclusion

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## Potential Issues

- Preprocessing Challenges
- Broken Assumptions
- Need Better Features





# 03 App

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Running a demo in Streamlit





# Future of FiFo<sup>Inc.</sup>

## App Development

Many design features and graphs still needed but the demo was really fun to build.

## Model

Explore different classifiers apart from **Logistic Regression**.

## Next Steps

- Explore more in depth each violation and its nuances.
- Scaling my work to apply for multiple cities and different types of establishments.



**Thank you!**

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