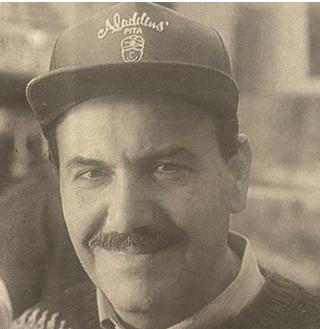




Predicting Pita Bread Sales at Family Bakery to Improve Orders Accuracy



— Meet the Family



Carl Nahra
Grandfather



John Nahra
Data Scientist
github.com/jnahra



Mitchell Nahra
Father



Agenda

- 1 Business Problem
- 2 Data Overview
- 3 Modeling & Performance
- 4 Findings & Recommendations
- 5 Future Insights



Business Problem

Business Problem

Sales

\neq

Orders



Business
Problem

Data
Overview

Modeling &
Performance

Findings &
Recommendations

Future
Insights

— Bottom Line



Sales Forecast > Current Orders



Business
Problem



Data
Overview



Modeling &
Performance



Findings &
Recommendations



Future
Insights

Data Overview



Data Overview

Sources



Data

January 2021 -
March 2023

Limitations

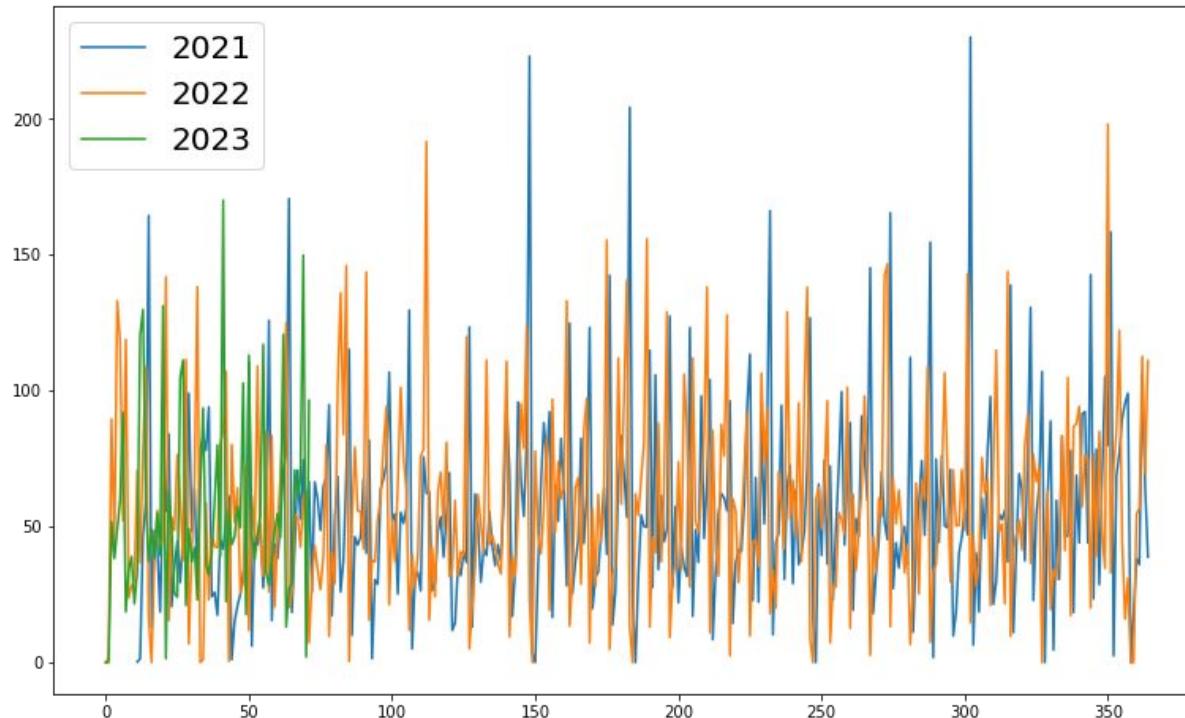
Unknown
Known Orders
Small Test Set

Filtering

Large Plain Pita
Ex. Large Sales
Retail & Wholesale



Retail Large Plain Sales 2021-Present



Business
Problem



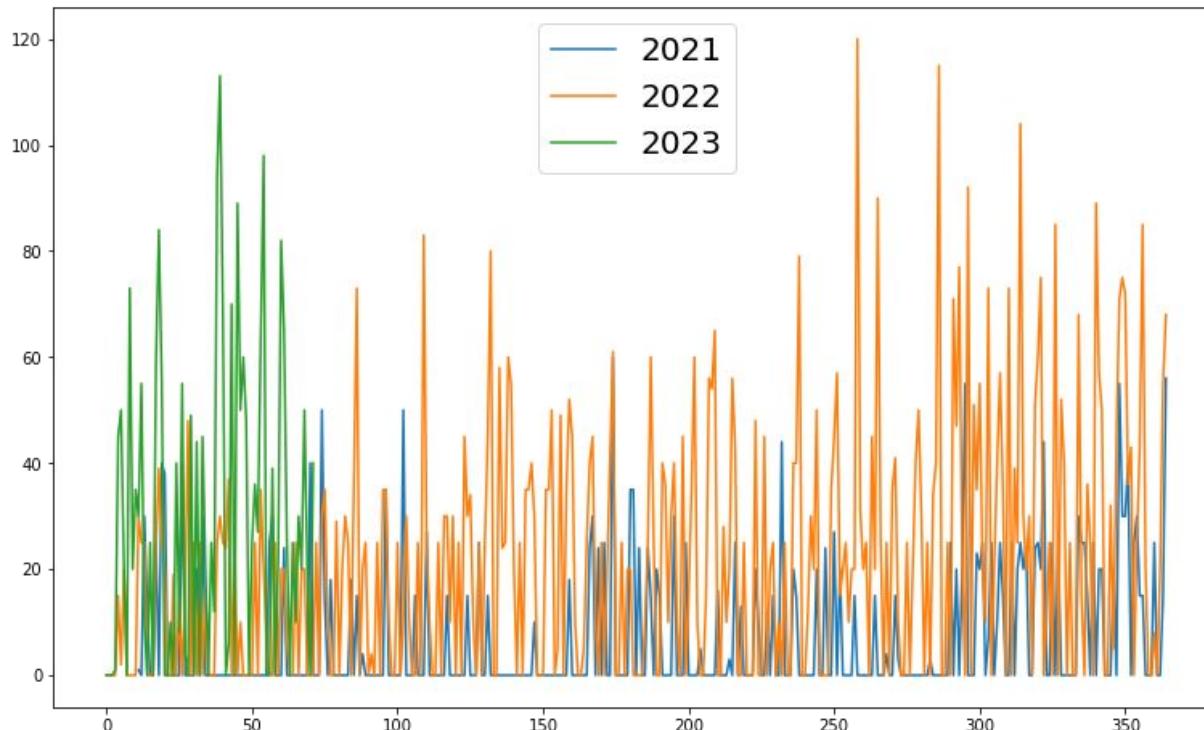
Data
Overview

Modeling &
Performance

Findings &
Recommendations

Future
Insights

Wholesale Large Plain Sales 2021-Present



Business
Problem



Data
Overview



Modeling &
Performance



Findings &
Recommendations



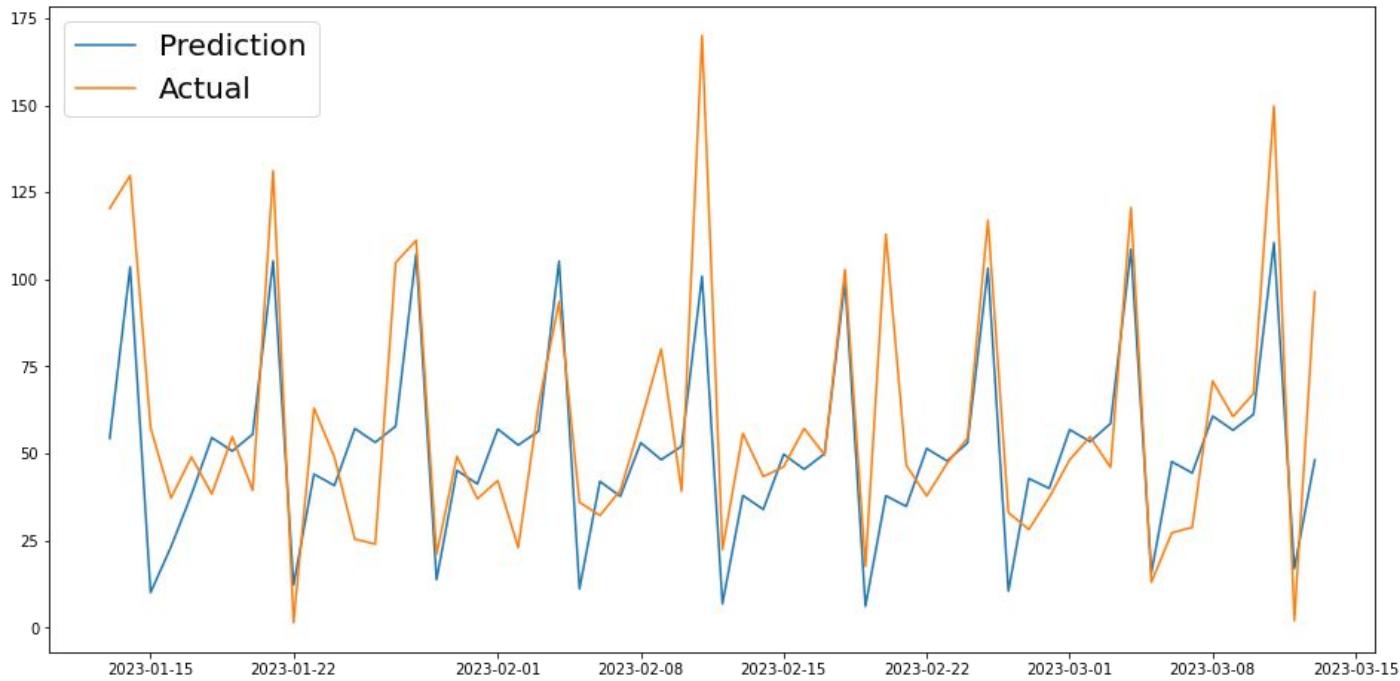
Future
Insights



Modeling & Performance

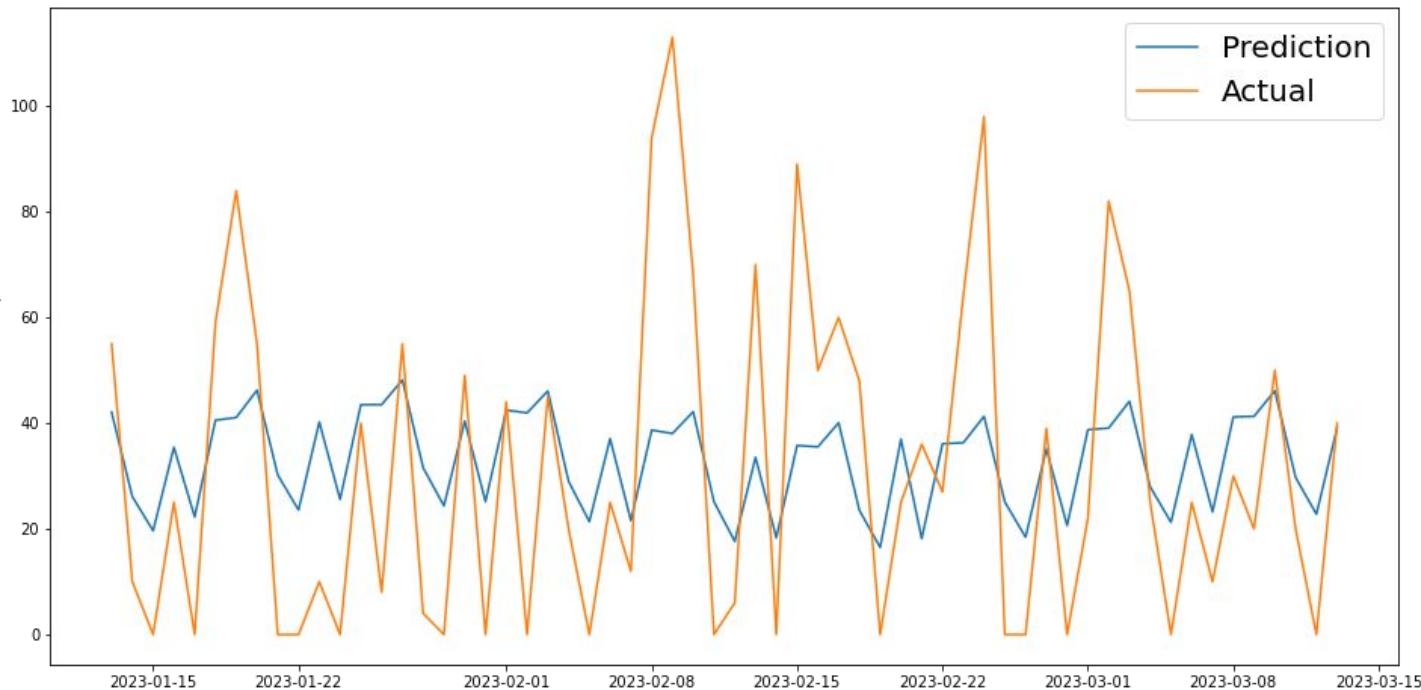
Retail Time Series Model

Average Daily Error
~24 packages of pita



— Wholesale Time Series Model

Average Daily Error
~25 packages of pita



Business
Problem

Data
Overview



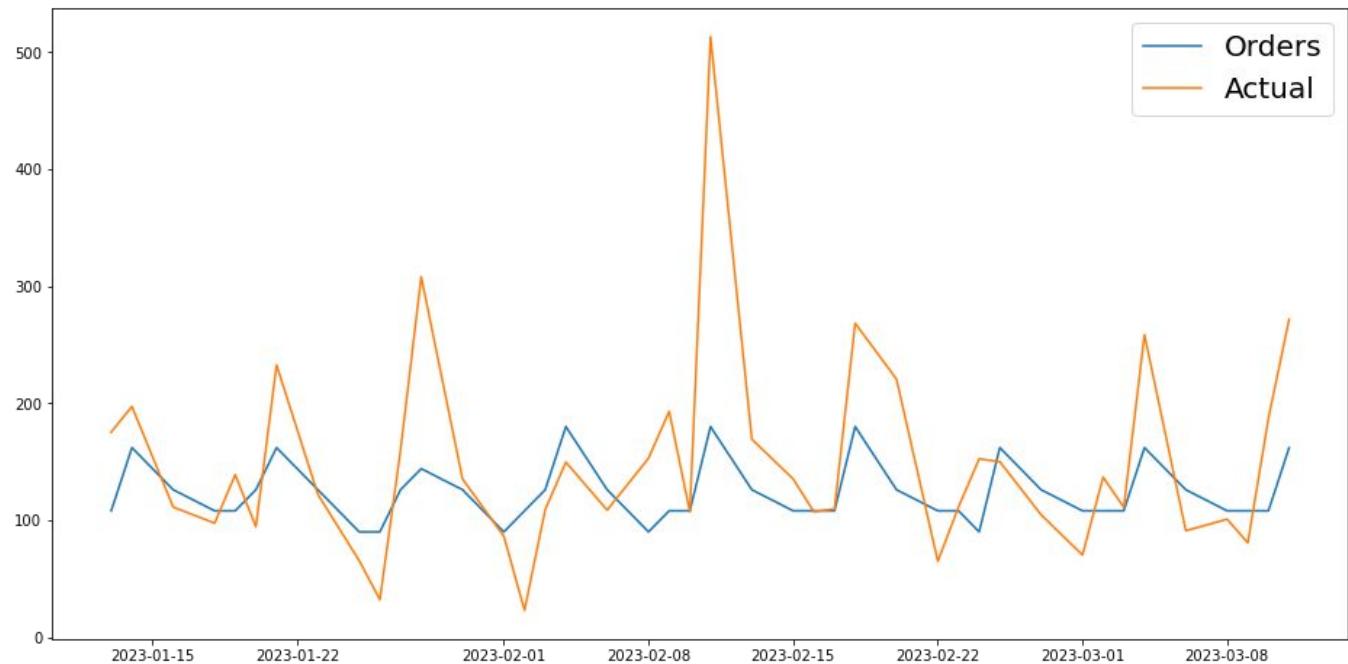
Modeling &
Performance

Findings &
Recommendations

Future
Insights

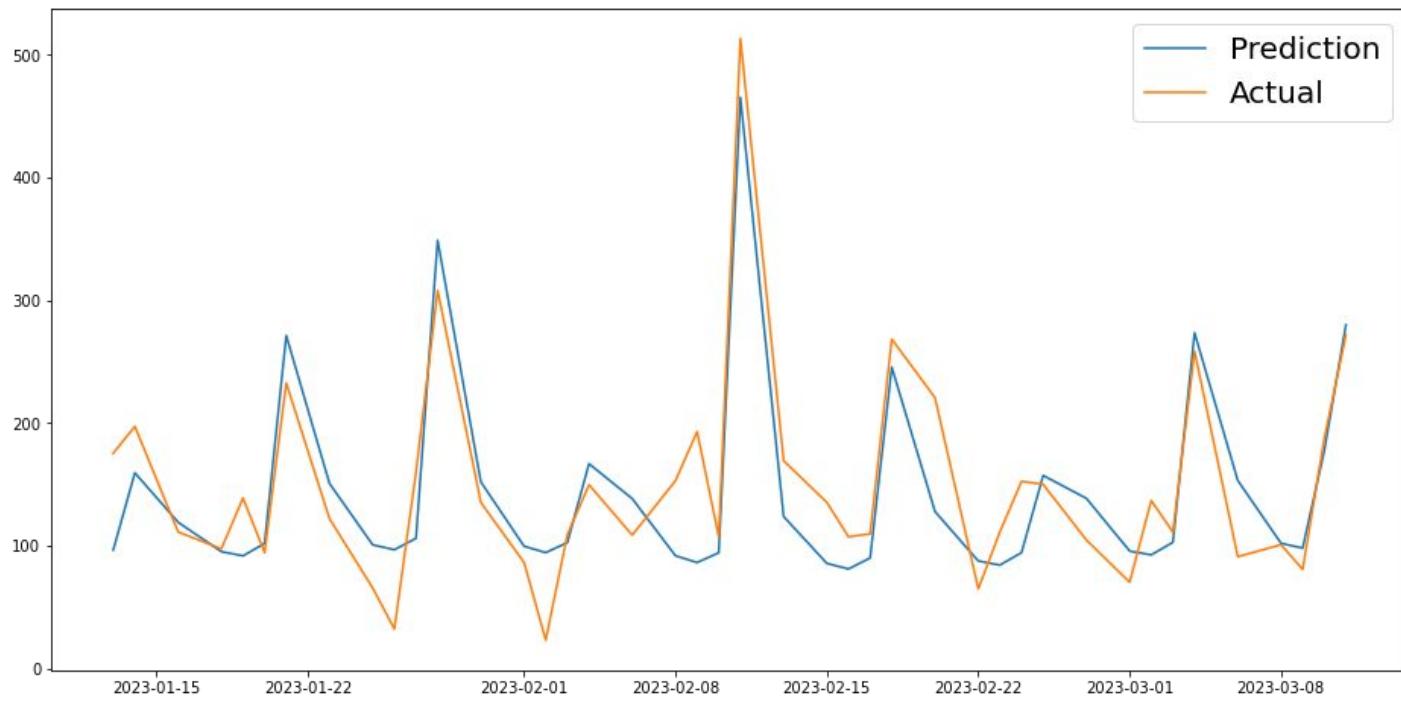
Current Orders versus Total Sales

Average Daily Error
~75 packages of pita



Total Predicted Sales versus Total Sales

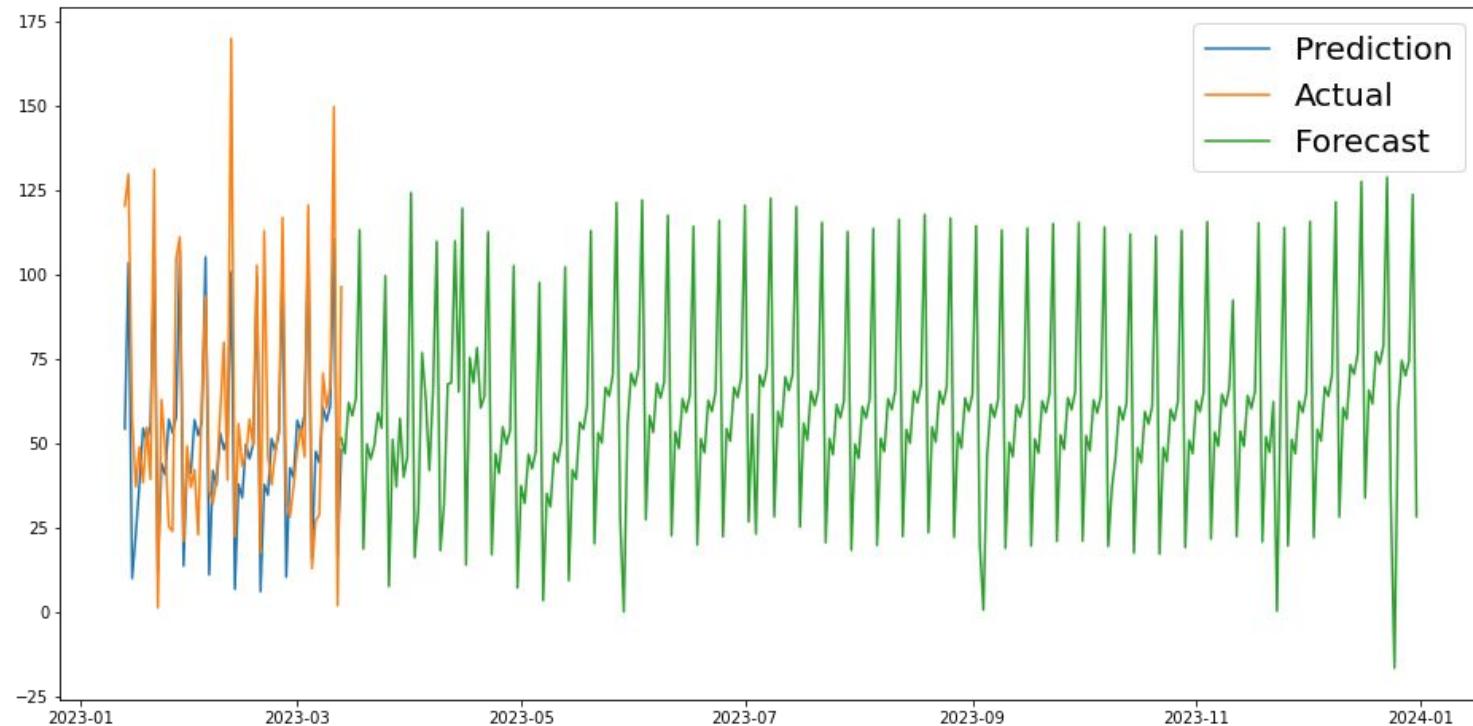
Average Daily Error
~42 packages of pita



Findings & Recommendations



2023 Retail Sales Forecast



Business
Problem



Data
Overview



Modeling &
Performance

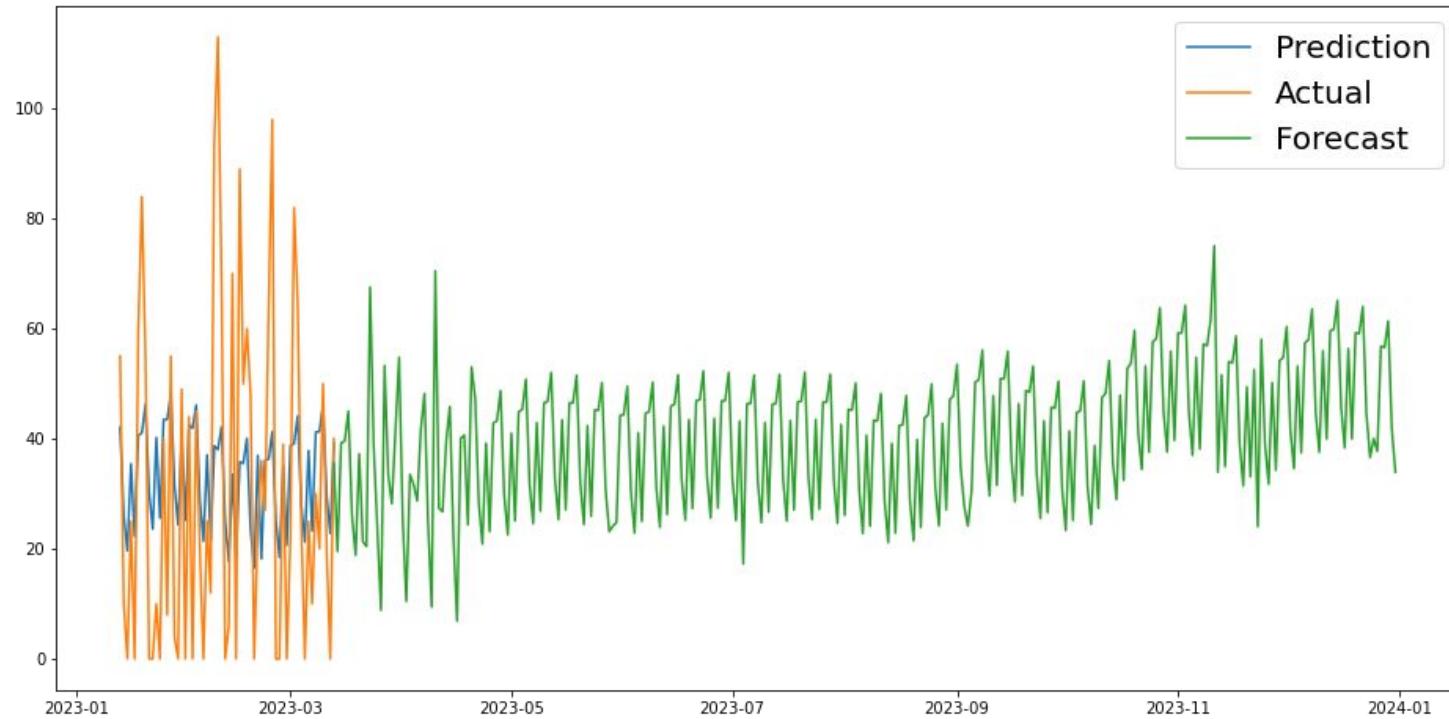


Findings &
Recommendations



Future
Insights

— 2023 Wholesale Sales Forecast



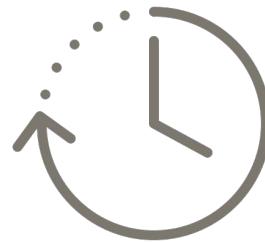


Future
Insights

— Future Insights



Expand to
Other Bread
Types



Keep Tracking
Simple &
Advanced
Models



Run Surplus
versus Shortage
Analysis

Business
Problem

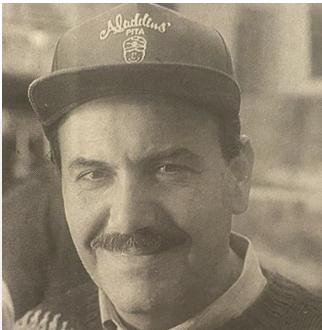
Data
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The Nahra Family



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Thank You!

Questions?

