

Data Science in Restaurant Analytics: Capstone Project

Apply your data science skills to real-world restaurant data over 4 weeks. Analyze trends, build predictive models, and create a professional video showcasing your insights.

 **Matthew Idowu Oyeniran**



Project Overview

1 Timeline

Complete the project within 1 month with weekly deliverables.

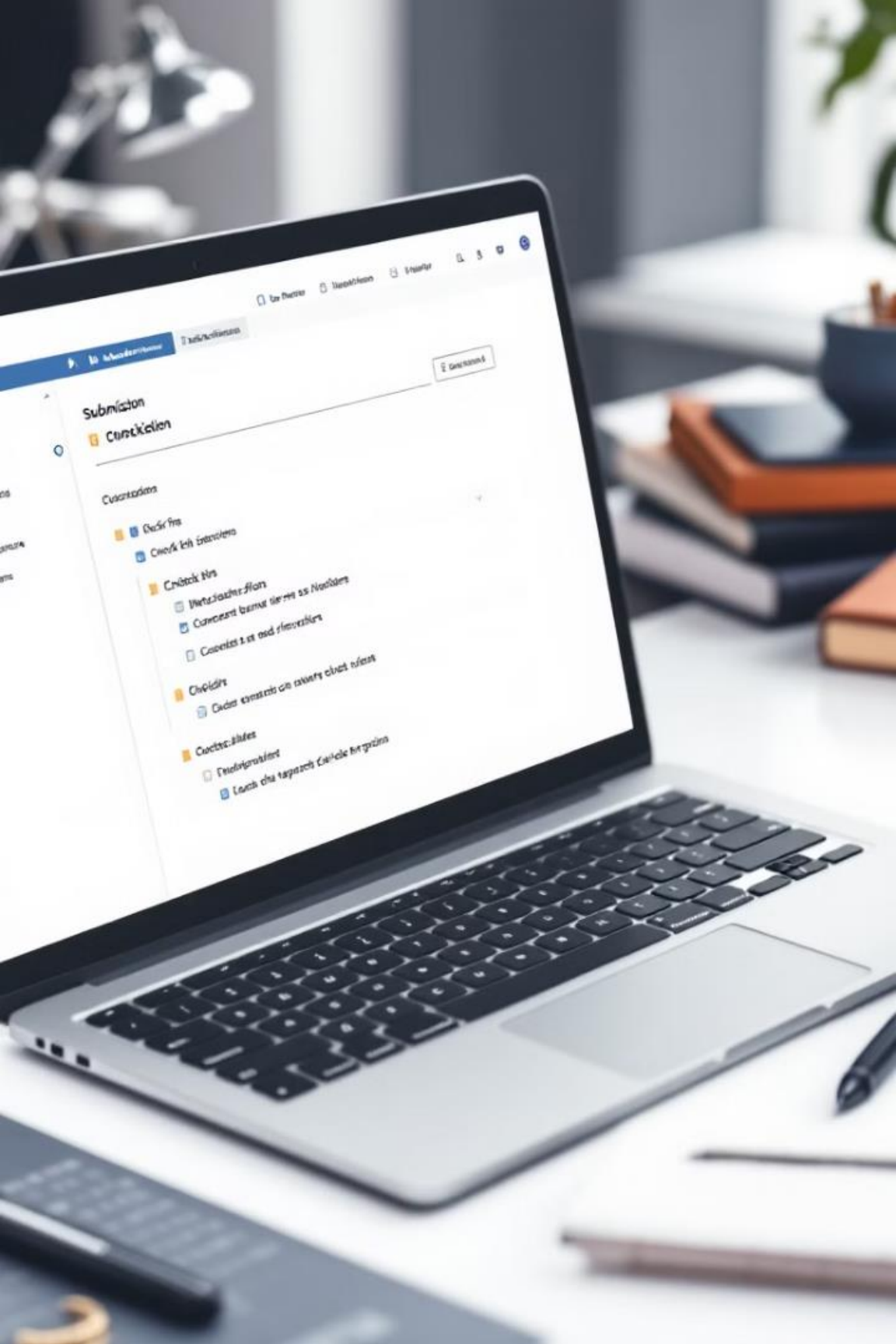
2 Objective

Analyze restaurant data to perform EDA, build predictive models, and derive actionable insights.

3 Final Goal

Create a professional video showcasing your work to build credibility on LinkedIn.





Submission Guidelines

1

Weeks 1-3

Submit structured progress reports documenting your work each week.

2

Week 4

Submit your final video and a summary report of findings.

3

LinkedIn Post

Host your final video on LinkedIn with #oyeniran-matthew hashtag.

4

Submission

The student must submit links to Medium, LinkedIn, and GitHub for the project.

Dataset Link



Week 1: Data Exploration

Dataset Overview

Explore dataset dimensions. Check for missing values. Perform data type conversions as needed.

Target Variable

Analyze "Aggregate rating" distribution. Address any class imbalances.

Descriptive Analysis

Calculate statistics for numerical columns. Explore categorical variables. Identify top 5 cuisines and cities.

Week 2: Data Visualization



Visualizations

Create histograms, bar plots, and box plots of ratings. Compare average ratings across cuisines and cities.



Geospatial Analysis

Map restaurant locations using coordinates. Analyze distribution across cities. Correlate location with ratings.



Additional Analysis

Identify outliers and their effects. Determine relationship between votes and ratings.

staurant

Dashboard

Perfected

Restaurant

Created 11/19/13 / Version

Mont Falls
1,15.30 me

45
Clayton Falls
Mas

in Types
55,057,2.66
63%

Open Data

155,044 (Total Points)
155,775 Peak Point
154,035 Peaks
155,127 Customer Ratings
111,659 Sites

Sales Location



Locations



Identified Ints

Nov 2016

People Likes

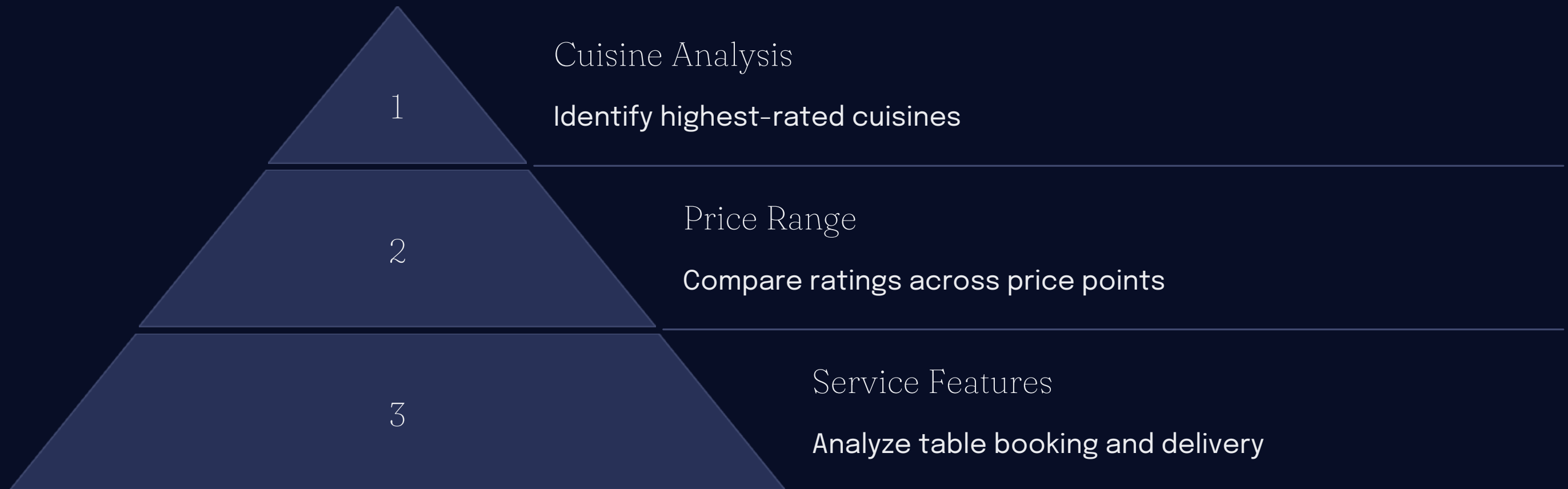
People New Likes



Sale Customer Location



Week 3: Customer Preferences



Analyze relationships between cuisines and ratings. Identify popular cuisines by votes. Determine which price ranges receive highest ratings. Compare restaurants with and without table booking.

Week 3: Additional Insights

Table Booking Impact

Determine if table booking availability affects ratings across different cities. Compare average ratings with and without this feature.

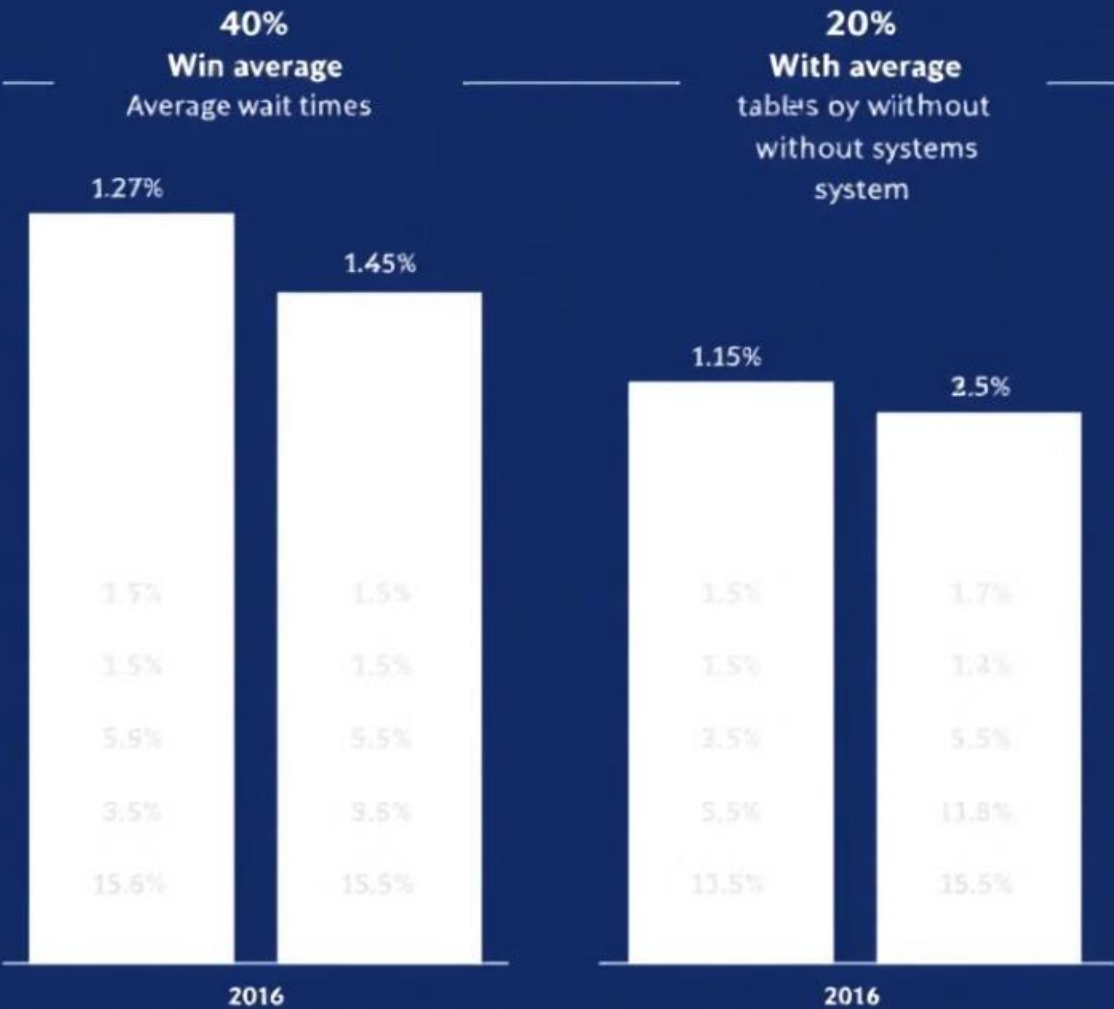
Online Delivery Analysis

Calculate percentage of restaurants offering delivery. Analyze availability across different price ranges.

Customer Preferences

Identify specific cuisines that consistently receive higher ratings. Determine city-specific preferences.

The noticeable wait times of restaurants at with bookings the those system and without bookings





Week 4: Predictive Modeling

1

Feature Engineering

Extract additional features from existing columns. Create new features by encoding categorical variables.

2

Model Building

Build regression models to predict restaurant ratings. Split data into training and testing sets.

3

Model Evaluation

Evaluate using RMSE, MAE, and R-squared. Compare different algorithms like linear regression and random forest.



Final Deliverables

Professional Video

Create a 3-5 minute video summarizing project objectives, key findings, challenges, and future scope.

Final Report

Submit detailed report of methodology, results, and conclusions in PowerPoint format.

LinkedIn Post

Host video on LinkedIn with project description. Hashtag and tag your mentor.