

# Food Delivery ETA Prediction: Optimizing Delivery Times

Welcome to our presentation on the Food Delivery ETA Prediction project. This project aims to solve the ongoing challenge of accurately predicting delivery times for food orders. We will explore how machine learning can help provide a more reliable and personalized delivery experience.

Done By:

Sricharan N (231801170)

Shamvruth(231801163)



# Problem Statement: The Need for Accurate ETAs

The project addresses the persistent issue of inconsistent and inaccurate delivery time estimates in the food delivery industry. Customers often experience delays, frustration, and a lack of confidence in the provided ETAs.

The goal is to develop a model that accurately predicts the time it will take for an order to arrive at the customer's location, considering factors such as food type, restaurant, and delivery address. This will enhance the overall customer experience.

# Objectives: Predicting ETAs with Precision

## 1 Predictive Model

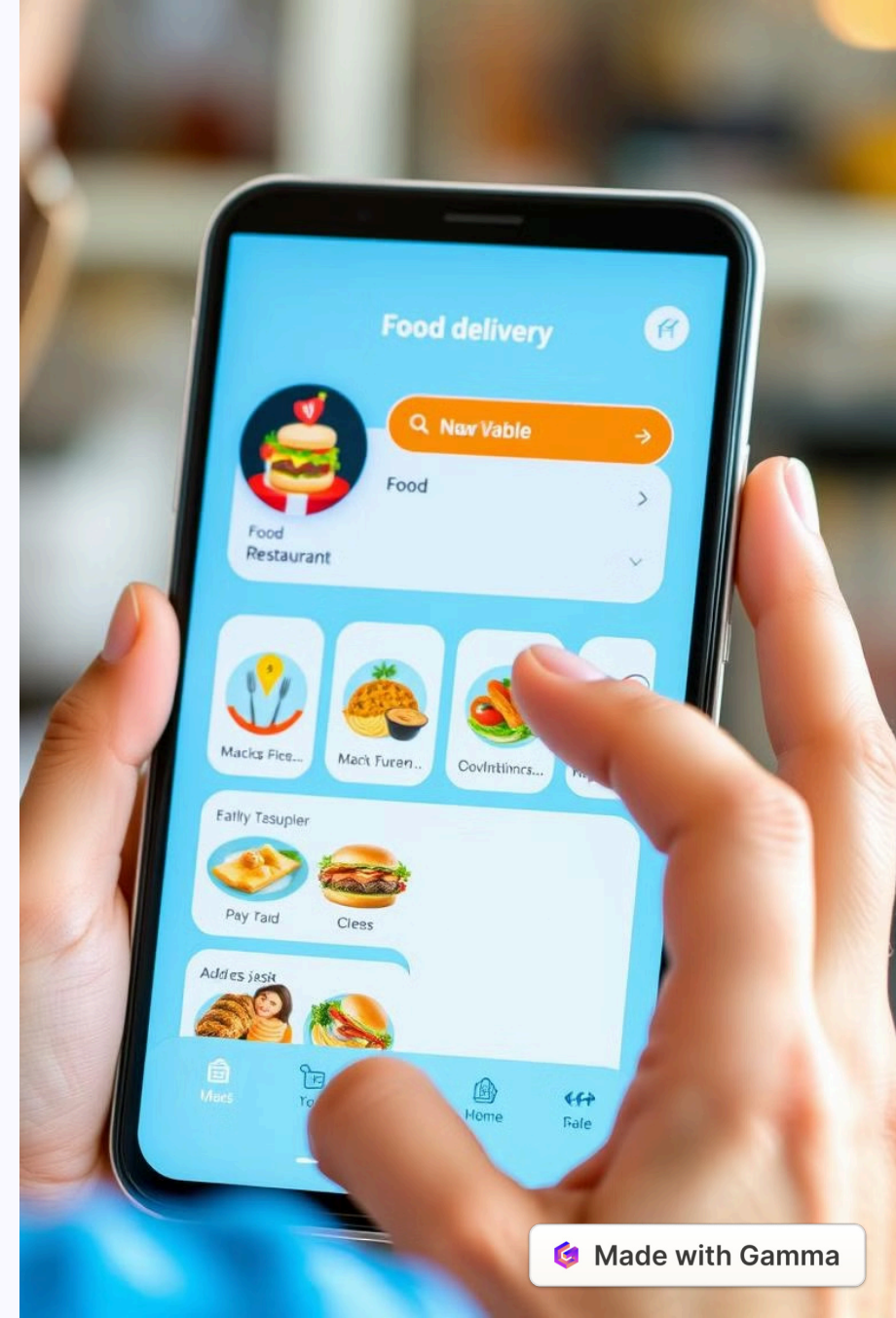
The project aims to develop a machine learning model that uses historical data to predict food delivery ETAs with high accuracy.

## 2 Factor Analysis

We aim to analyze the key factors that influence delivery times, including food type, restaurant characteristics, and user location.

## 3 Web Application

The goal is to build a web application that allows users to select food, restaurant, and address, and the system will predict the ETA for delivery.





# Existing Systems: Limitations of Current Solutions



## Inaccurate Estimates

Many existing food delivery platforms provide estimated delivery times, but they are often inaccurate or inconsistent. The lack of accurate information can lead to customer dissatisfaction.

## Lack of Personalization

Current systems often fail to consider specific factors such as user address and food type in a comprehensive manner, resulting in imprecise ETAs.

## Limited Data Utilization

Existing systems don't always leverage historical data and machine learning algorithms effectively to improve ETA prediction accuracy.

# Proposed System: A Data-Driven Approach



## Food Type

The system will take into account the type of food ordered, as different types of food might require varying preparation times.



## Restaurant

The system will consider the specific restaurant, including its location, average order time, and kitchen capacity.



## Delivery Location

The system will analyze user location and traffic conditions to estimate delivery time accurately.



# Implementation: Building the Model and Application

1

## Data Collection

We collected a dataset containing information on food type, restaurant, user address, and actual delivery time. This data will be used to train the machine learning model.

2

## Preprocessing

The data was cleaned and preprocessed to handle inconsistencies and format it for use in the model. Categorical variables were encoded for proper analysis.

3

## Model Development

A regression model, such as linear regression or decision tree regression, was trained to predict the ETA based on input features.

4

## Web Application

A web app using Flask was developed to enable users to input their preferences (food type, restaurant, and address) and receive a predicted ETA.



# Conclusion: A Step Towards Improved Delivery Experience

1

## Reliable Predictions

The project successfully developed a model that can predict food delivery ETAs with a high degree of accuracy.

---

2

## Integration Potential

The model can be seamlessly integrated into existing food delivery platforms for real-time applications, enhancing the user experience.

---

3

## Future Work

Future improvements include real-time tracking, incorporating advanced machine learning techniques, and optimizing model performance for even greater accuracy.





## Next Steps: Implementing and Iterating

The next step involves deploying the model and web app to a real-world environment for testing and user feedback. We will monitor performance, collect user data, and continuously update the model to improve accuracy and efficiency. We believe this project represents a significant step toward improving the food delivery experience for everyone.