**Predicting Food & Beverage Delivery Times**

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## **Executive Summary**

1 page

Concise problem statement: This analysis aims to predict estimated delivery times for a food delivery service.

List of major concerns/assumptions (if any)

Summary of findings

Recommendations

## **Problem Background**

**Problem Description**

This analysis aims to predict estimated delivery times for a food delivery service. A firm can give the option for delivering the food to a customer’s house; using current technology, the company may give the consumer an estimated time of arrival to help manage their expectations, which could lead to enhanced retention of customers for future orders. Companies like DoorDash or GrubHub give customers an estimated time of delivery for food and beverage orders. Most consumers may expect a few conditions to affect the time to deliver, but there may be many circumstances that impact the delivery time. For example, if the algorithm knows that there is a crash impeding traffic between the major routes of the customer and the delivery service, then that may impact the transport time. Additionally, severe weather may delay the ability of a driver to deliver the food to the destination. Overall, providing accurate estimates to the customer will help manage expectations, which may lead to retained customers.

**Data Description**

The data set for this problem consists of 19 columns describing the characteristics of the delivery driver and the conditions that they face while driving to the destination. The target, or predicted, variable are the minutes taken to deliver the food. Location data such as the latitude and longitude of both the source restaurant and delivery location are included. The data offers details such as the time the that the customer placed the order and the time that the delivery service picked it up. Additionally, the data describes the type of order placed. Other characteristics about the city or known festivities occurring during the time of delivery are included. Finally, the remaining data reveals observed weather, traffic, and vehicle conditions. Altogether, this information helps create a model to predict the time to deliver the food or drinks.

**Exploratory Data Analysis**

*INCLUDE EXPLORATORY DATA ANALYSIS HERE*

**Methodology**

**Data Cleansing**

Feature selection, engineering, missing value imputation, outlier processing, etc.

Modeling choices

State model validation plan (e.g., 5-fold CV)

## **Results**

Model performance summary

Key findings of analysis! Page 2

## **Conclusion**

Summary of problem, approach, findings

Key issues, limitations, etc.

Final recommendation

## **References**

**Appendix**

Data visualizations, tables, transformations, etc. which support the work, but are not of primary importance

Important code excerpts or algorithms used / developed (if any).