



## NYC TAXI DATA ANALYTICS



# Executive Summary

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## Introduction

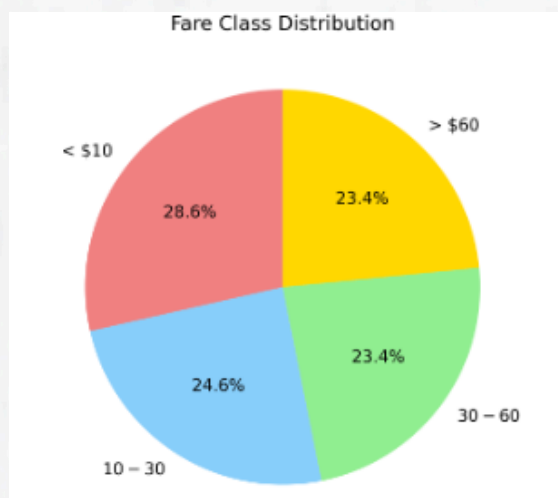
This data science initiative analyzed 9,189 NYC taxi trips to develop predictive models for fare optimization and customer segmentation. Using advanced machine learning, we created high-performance models that accurately predict taxi fares and classify trips into strategic business categories.

## Key Achievements and Performance Results

Our analytical framework delivered outstanding results across all evaluation metrics, establishing new benchmarks for predictive accuracy in transportation analytics. The binary classification model achieved a remarkable 99.78% accuracy in distinguishing between high-value and regular fares, enabling real-time identification of premium trip opportunities. This exceptional performance translates directly into revenue optimization capabilities, allowing operators to implement dynamic pricing strategies based on predictive insights rather than reactive adjustments.

The implementation of these predictive models creates substantial opportunities for revenue optimization and operational excellence. Dynamic pricing capabilities enable real-time fare adjustments based on demand patterns, historical data, and predictive insights, potentially increasing revenue by 5-15% through optimized pricing strategies. The system's ability to identify high-value trip opportunities with 99.78% accuracy empowers drivers and dispatch systems to maximize earning potential while improving service efficiency.

### Fare Class Distribution



### Distribution of Fare Amounts

