CONSUMER DEMAND PREDICTION FOR FAST FOOD SECTOR

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Abstract

Lack of fast-food fulfillment to the consumer, excesses of fast food over the estimated demand and business loss profit cause by inaccurate demand prediction are common nowadays in fast food centers. Therefore, this study proposes a solution to avoid this problem by predicting consumer demand for fast food using a forecasting algorithm known CatBoost with a data categorization technique. Fast food demand is affected by several independent variables such as seasonality, trend, price fluctuation and length of historical data. A combination of these selected variables was used to calculate demand prediction using parameter tuning in the CatBoost algorithm and other algorithms. Such as Linear Regression, LGBM and XGBoost. However, CatBoost was the best performing model were selected. Therefore, windows native standalone solution was developed to yield fast-food demand prediction statistics.

Keywords: CDP system, Customer, Time range prediction, fast food center, machine learning

Table of Abbreviations

Abbreviation	Meaning
ML	Machine Learning
CPD System	Consumer Demand Prediction System
CDP Application	Consumer Demand Prediction Application
CDP	Consumer Demand Prediction
IDE	Integrated Development Environment
GUI	Graphical User Interface
SVR	Support Vector Regression
SVM	Support Vector Machine
XML	Extensible Markup Language
MVC	Model View Controller

Table 1. Table of Abbreviations