

FLOWERS SALE PREDICTION USING MACHINE LEARNING

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ABSTRACT

India's culture is described by fusion. Nearly every day is a festival in this diverse, multicultural country where people speak hundreds of languages, practice dozens of religions, and belong to different ethnic groups. So, flowers play a major role at these celebrations. Flowers and floral arrangements are highly sought after items in both rituals and gifts. There is a variation of how flowers are used daily, meaning they aren't always used for rituals and gifts. Using machine learning, we can find out what influences Flowers sales and estimate future sales. In terms of the efficiency of the machine learning algorithms used for prediction, the conclusions are discussed. The system's main goal is to study future flower market sales and predict whether they will increase or decrease using various machine learning methods such as Gradient Boosted and Decision Trees.

Keywords: decision trees, gradient boosted, machine learning, flowers sale prediction

INTRODUCTION

India has many cultures. Many subcultures make up Indian culture. Culture in India is like a beautiful mixture of flowers that looks stunning together while maintaining their individuality in the mix. Flowers are closely associated with the culture. Every Indian day starts with a flower, and ends with one at dusk. People offer flowers to their deities daily and water their indoor plants [10]. A flower plays a vital role in Indian culture, be it in weddings, worship or medicinal practices. Flower markets sell flowers, and flower shops buy flowers from vendors. Secondly, Flowers are not used consistently on a daily basis, so there is a variation. We can use machine learning to identify factors influencing Flower sales and estimate future sales numbers. Here, machine learning has a lot of potential for use. In the field of machine learning, computers are able to execute some jobs better than people. They are employed to carry out specific tasks in a logical style and produce improved outcomes for the advancement of the modern civilization. The foundation of machine learning is mathematics, which may be used to design various models that are close to the desired output. Machine learning has been shown to be beneficial in the context of sales forecasting. More accurate sales forecasts can be made thanks to it. With respect to the information gathered from a Flower market prior sales, we have suggested machine learning techniques in our study. On the basis of a few essential characteristics gleaned from the available raw data, the goal here is to predict the sales pattern and the quantities of the products to be sold. To have a full understanding of the data, analysis and study of the data that was acquired was also done[15][16].

Predictions are made based on historical demand flows and other factors that will be known in the future. The major goal of predictive analysis is to assist the business in predicting its goals and modifying its approach to increase productivity in the near future.

LITERATURE SURVEY

Singh Manpreet, et al. [1] said inspection of the data collected from a retail store and prediction of the future strategies related to the store management is executed. Various sequences of events can have an

impact, such as climatic conditions, holidays, etc. It can change the state of departments, so it also examines these effects and how they affect sales.

Cheriyana, et al. [2] describe the purpose of this study is to explore the rationale for making decisions based on experimental data and the insights obtained from data visualization. Data mining techniques have been applied. It has been demonstrated that the Gradient Boost algorithm is most accurate at predicting future transactions.

Sekban, et al. [4] describes using techniques such as Clustering Models and measures for sales prediction, the aim of this paper is to predict future sales or demands of a firm. In the second step of the research, the potential of the algorithmic methods is estimated.

R. E. Febrita, et al. [7] said that the location was described as a significant predictor of housing prices. The contribution of location attribute on home price diminishes as expected from first class residential districts to fifth class residential districts.

D. G. Owusu, et al. [8] said that the four items that have the greatest influence on property prices are hospitals, schools, campuses, and recreational parks, all of which may be considered locational attributes.

METHODOLOGY

Data classification takes place in two steps, the first step is to collect data and second is training data. The proposed system is based on a single dataset. Two machine learning algorithms, Gradient Boosted and Decision Trees, are incorporated in the proposed system that we have developed to improve system performance. It work as first create a classification model and the second the model is used to predict the class label for given data. Upon applying algorithms, we were able to identify the outcome.



Figure 1 depicts the proposed system architecture.

Machine learning algorithms are used:

1. Decision Trees

A technique called a decision tree shows the anticipated outcomes of particular choices by graphing structured or unstructured data into a tree-like structure. The decision tree, which separates multiple decisions into branches, includes a list of potential outcomes beneath each branch. After careful consideration, the independent variable that separates the training set of data into the most diverse variety of logical categories is chosen. Because they are simple to understand and interpret, decision trees are extremely popular.

2. Gradient Boosted

A gradient boosted methodology uses a network of connected decision trees to produce ranks. It builds one tree at a time, addressing issues in the first to build a better second tree. The gradient boosted model is used to repeatedly resample the data set, producing results that produce a weighted average of the resampled data set. Using these methods, some businesses are able to predict prospective search engine results. The gradient boosted approach is the best technique for overall data accuracy since it communicates data sets more effectively than other methods.

Sample Dataset

day_of_the_month	month	day_of_the_week	other	state_holidays	count
01-08-2021	8	1	1	1	324
02-08-2021	8	2	1	0	73
03-08-2021	8	3	1	0	62
04-08-2021	8	4	1	0	96
05-08-2021	8	5	1	0	99
06-08-2021	8	6	1	0	148
07-08-2021	8	7	1	0	182
08-08-2021	8	1	1	1	324
09-08-2021	8	2	1	0	325
10-08-2021	8	3	1	0	328
11-08-2021	8	4	1	0	327
12-08-2021	8	5	1	0	330
13-08-2021	8	6	1	0	329
14-08-2021	8	7	1	0	330
15-08-2021	8	1	1	1	1500
16-08-2021	8	2	1	0	1000
17-08-2021	8	3	1	0	182
18-08-2021	8	4	1	0	324
19-08-2021	8	5	1	1	1000
20-08-2021	8	6	1	0	300
21-08-2021	8	7	1	0	130
22-08-2021	8	1	1	0	320
23-08-2021	8	2	1	0	350
24-08-2021	8	3	1	0	201
25-08-2021	8	4	1	0	350
26-08-2021	8	5	1	0	128
27-08-2021	8	6	1	0	150
28-08-2021	8	7	1	0	225

Figure 2: Flower Sale Dataset

Graphical representation of Data analysis

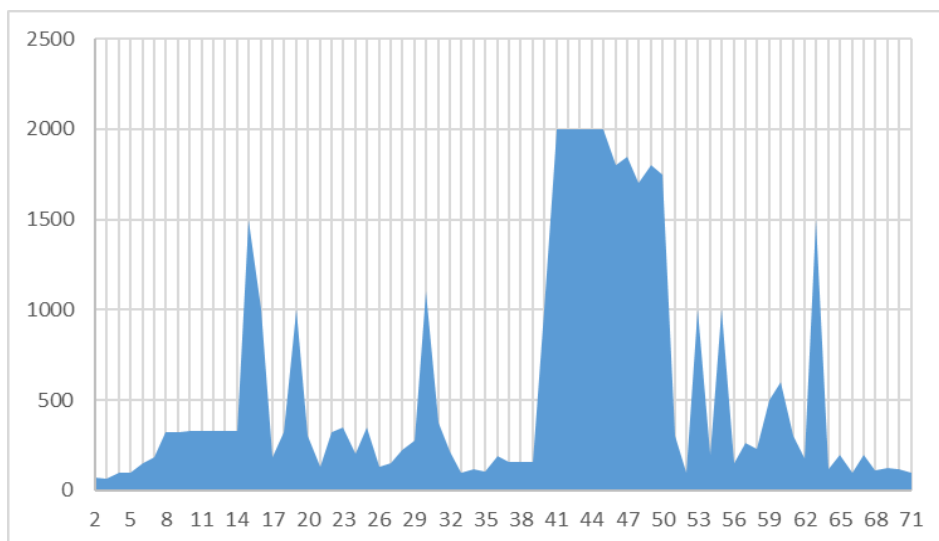


Figure 3: Data Analysis

Algorithm

- 1: Read INPUT
- 2: Compare and process with Flower Sale Dataset
- 3: Apply algorithms
- 4: OUTPUT

RESULT AND CONCLUSION

The system for prediction sales is proposed in this study. Through training and testing the classification algorithm with current and historical sales data, we incorporated two common forecasting models and various features to the trigger model. Overall, we were able to predict data with greater accuracy than could be achieved simply analysing the algorithms. The accuracy of the system can be improved with different datasets in the future using advanced classification algorithms and methodologies. Based on variables in the market area, the algorithm can forecast the sale of Flowers. The addition of a location suggestion module based on market recommendations for flower sales will allow for the proper place to be given in the future.

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