



A Baseline Classifier Approach Using Social Ads for Sales Prediction

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Abstract: Selecting the appropriate algorithm for a project can be a challenging and time-consuming task, and even a small error in the selection process can significantly impact the results. Additionally, it can be difficult for humans to compare the benefits and drawbacks of different algorithms. The primary goal of this particular project is to forecast product sales using social ads and analyze the resultant sales and profits. To achieve this prediction, we have opted to allow the machine to choose the most suitable algorithm by evaluating nine different algorithms and selecting the one that yields the best outcome.

IndexTerms - Baseline Modelling, Machine learning, Hyper Tuning, Random Search CV, Standard Scaler.

I. INTRODUCTION

Our project focuses on analyzing customer purchases to identify trends and patterns, such as which income brackets are more likely to purchase our product. This project goes beyond just predicting sales. The machine autonomously selects the most suitable algorithm by comparing parameters, advantages, and disadvantages. The dataset is visually presented, allowing all 9 algorithms to access and analyze it for predictions. As a result, we do not know which algorithm the machine will ultimately select.

II. LITERATURE SURVEY

1. Predicting the best-selling new products in a major promotion from this paper we get know how correctly predicting the sales volume of new item can be challenging because of the limited historical sales records of new product. To overcome this challenge, one approach is to use machine learning techniques that can incorporate a wide range of data sources, including historical sales data, customer demographics, and online search trends. By training a machine learning model on a large dataset of historical sales data, you can identify patterns and trends that can help you predict the sales volume of a new product more accurately. Additionally, you can use data analytics tools to monitor customer behavior and adjust your marketing strategies in real-time to optimize sales performance. With the right combination of data, technology, and marketing expertise, you can increase the chances of successfully predicting and promoting best-selling new products in a major promotion.
2. From anticipation to action: data reveal mobile shopping patterns from this we get to know how to forecast sales growth during the mega sales event in China.
3. Baseline prediction of point of sales data from this we get to use baseline model and compare the winters model and linear exposure smoothing.
4. Machine learning application for black Friday sales prediction framework from this we get to know how to developing a predictor with significant commercial value would assist shop owners with various aspects of their business operations such as inventory management, financial planning, advertising, and marketing.
5. One way to analyze sales data is to use panel data, which can provide insight into patterns and trends over time. A new approach to sales forecasting is the panel data product filter (PDPF) model, which involves using statistical techniques to track changes in sales data and predict future sales. The effectiveness of the model is measured using real data collected from the fashion industry.

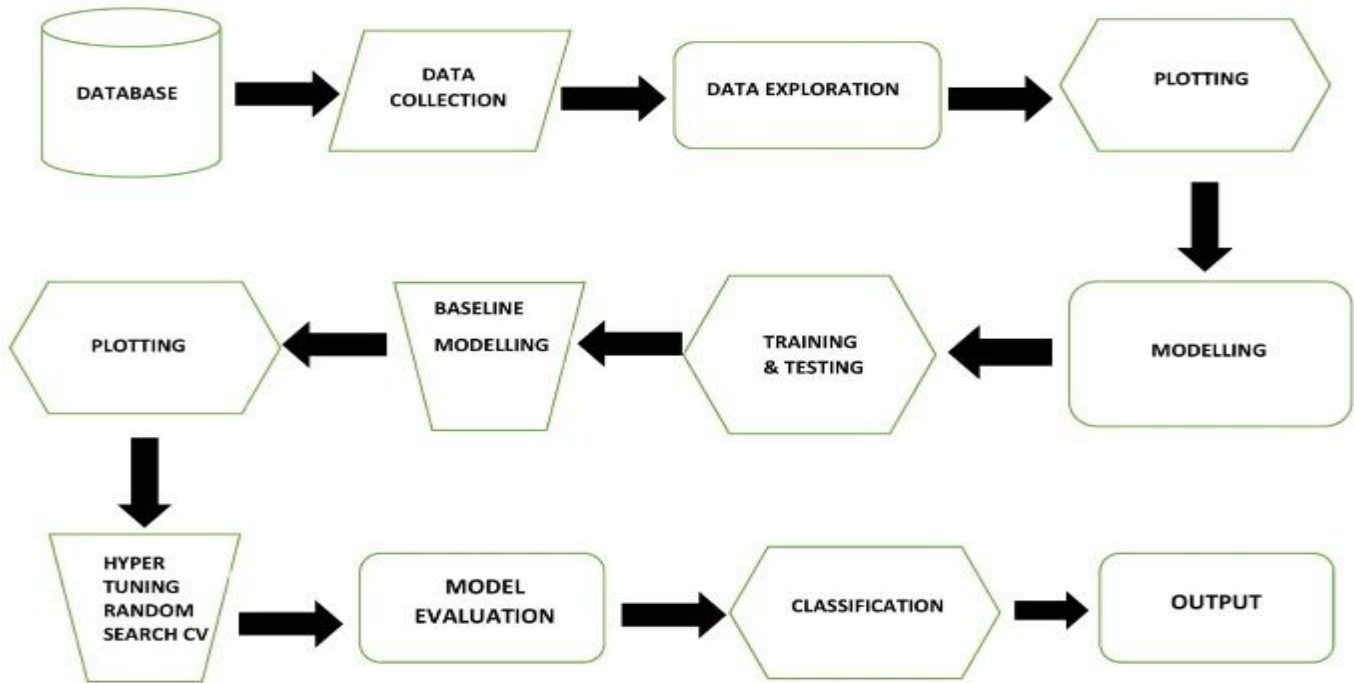
6. Sales forecast method for products with no historical data from this we get know, In comparison to a range of machine learning models, the proposed method showed an improvement in forecast accuracy within a relatively brief period. Additionally, this method can be applied to smaller datasets, which widens its range of applicability and meets the requirements of real-world business scenarios.
7. An Intelligent model for predicting the sales of a product from this we get know how to predict the sales of a particular project.
8. An online retail prediction model based on a LSTM neural network from this we get know how to predict online retail sales and prediction model
9. Prediction analysis sales for corporate services from this we get know how to precise estimates make it possible for Telecommunication Company to survive the market war and increase its market growth.
10. Sales forecasting for local store owners in India We know how to let store owners manage their current inventory and billing. The sales forecast will help them adjust the investment in products and products to ensure the best results.
11. By analyzing the impact of dimensionality reduction techniques on large datasets, it has been discovered that machine learning (ML) algorithms paired with principal component analysis (PCA) tend to yield superior results when dealing with high-dimensional datasets. However, when the dimensionality of the datasets is low, it has been observed that ML algorithms without dimensionality reduction actually produce better results. These findings were confirmed through experimentation
12. Revenue Performance Forecasting Using Big Data Analysis of Back Order Forecasting System We know how to find machine learning models equipped with down sampling techniques to increase expected results.
13. Automatic sales forecasting based on machine learning Here we know how to predict the sales starting point of companies with a sales forecast based on machine learning.
14. Through an analysis of iPhone-related tweets, it has been found that there is a correlation between the content of these tweets and the sales of iPhones. This correlation is further strengthened when the sentiment of the tweets is taken into account. These results have significant implications for predictive analytics using big social data, highlighting the importance of considering the sentiment behind social media posts in order to better understand consumer behavior and make accurate predictions about future sales trends.
15. Walmart Sales Forecast Using XGBoost Algorithm Here we know how to use XGBoost algorithm Walmart sales are estimated with the help of Kaggle dataset and feature ranking is also done.
16. Predicting vehicle sales by sentiment analysis of twitter data and stock market values from this we get know, social media data and stock values are essential to forecast monthly total vehicle sales; and DE seasonalizing procedures can improve forecasting accuracy in predicting monthly total vehicle sales.
17. The use of linear regression analysis can assist in predicting the sales value of online shopping for large retail businesses, such as superstores. By analyzing current sales data, this method can provide insight into future sales trends, helping businesses to increase profits and stay competitive in the marketplace. Accurate sales predictions can also lead to increased customer satisfaction and help to strengthen the brand image of the business.
18. This study explores the impact of online reviews on consumer purchasing behavior. It aims to highlight the relationship and differences between two research methods: network big data analysis technology and psychological empirical research. Through this analysis, the study provides insight into how these two methods can complement each other, ultimately leading to a more comprehensive understanding of the effects of online reviews on consumer behavior.
19. Online shop daily sale prediction using adaptive network from this we get know how, Inventory management, to many online shop owners, hence is a challenging task. Accurate forecasting of daily sales helps better replenishment and sale.
20. The goal of this study is to develop a reliable method for predicting online sales performance with greater accuracy. Drawing on insights from previous research, the authors introduce the Dependency Scor-Topic Sentiment (DSTS) model. By analyzing textual reviews from online sources, this model aims to provide a more nuanced understanding of consumer sentiment, which can then be used to make more accurate predictions about sales performance..

III. BLOCK DIAGRAM

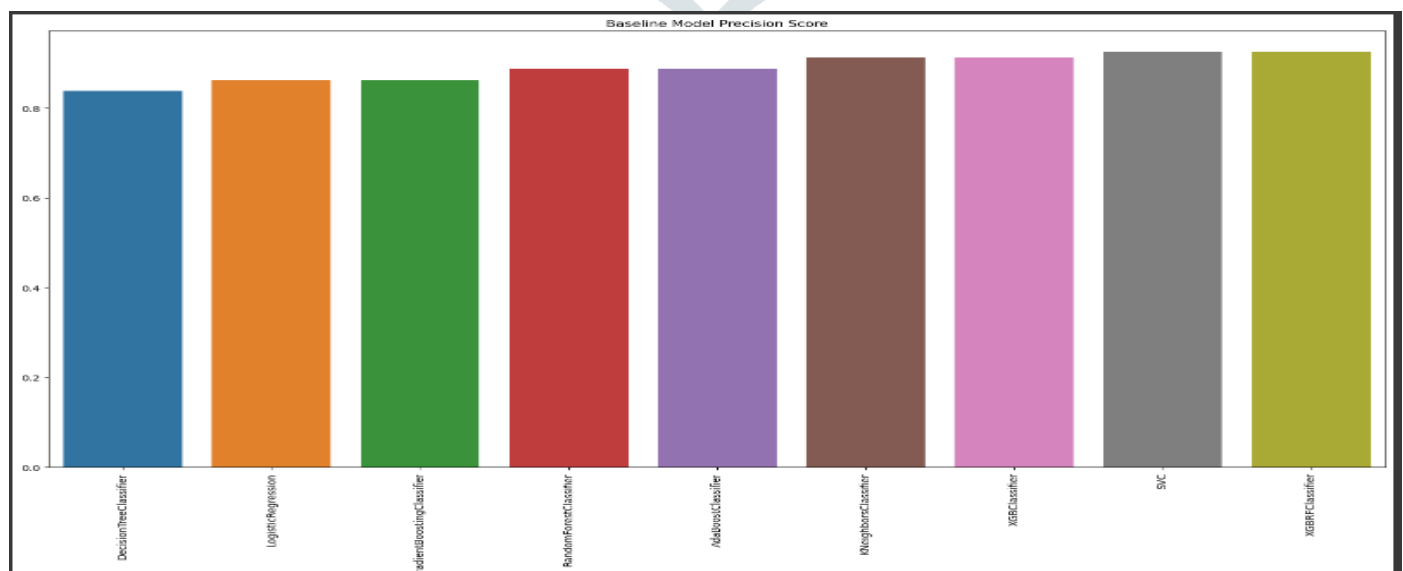
Data is first gathered from a database, and then it undergoes a process of exploration and cleaning. The dataset obtained is described in different form for all the algorithms to access the data without any interruption. Modelling here refers to the StanderScaler importing process and description. Then this model is trained and tested. Baseline model is developed and hyper tuning is done along with the random search cv, then this model is also trained and tested. From the chosen algorithm outcome of the hyper tuning the algorithm model is evaluated. The prediction output is obtained.

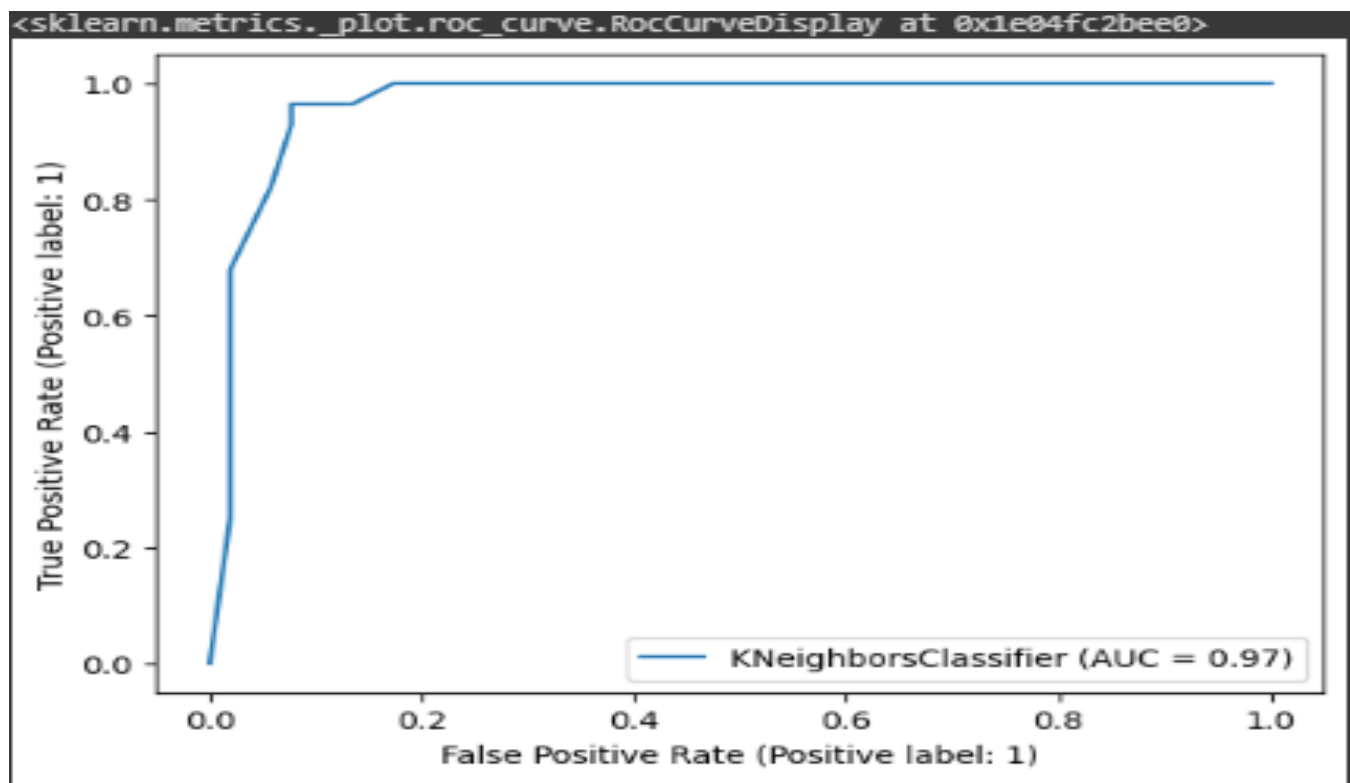
IV. RESULTS AND DISCUSSION

4.1 Baseline model precision score



4.2 ROC Curve





IV. CONCLUSION

The Baseline classifier approach using social ads for sales prediction project has been implemented using a wide range of Python libraries, as well as artificial intelligence and machine learning techniques to achieve greater accuracy. It incorporates several different methodologies, including the baseline model and classifier approach, hyper tuning, random search, deep learning, and data science, to provide an accurate sales prediction.

V. FUTURE SCOPE

In the future, researchers could explore the possibility of integrating sentiment analysis of sales-related data with historical sales figures to enhance sales prediction accuracy. Such an approach would simplify and streamline the research process. Sales prediction is an essential project that is always in demand, and the incorporation of algorithm selection would have a significant impact on the prediction field.

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