GLOBAL SALES DATA ANALYTICS

LITERATURE SURVEY

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SURVEY 1

Walmart's Sales Data Analysis- A Big Data Analytics Perspective

AUTHOR

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HIGHLIGHTS OF THIS PROJECT

We all are constantly thinking about the future and what is expected to happen in the coming weeks, months and even years, and to be able to do so, a look at the past is mandatory. Business needs to be able to see their progress and the factors affecting their sales [1]. In this technological era of large scale data, businesses need to rethink on the modern approaches to better understand the customers to gain a competitive edge in the market. Data is worthless if it cannot be analysed, interpreted and applied in context [2]. In this work, we have used the Walmart's sales data to create business value by understanding customer intent (sentiment analysis) and business analytics. Their strategy included the collection of huge Sales data and transferred on HDFS [5] and performed Map Reduce which later due to enormous data size, proved difficult to draw conclusion. Thus Hive processing was done to calculate average sales feature for all 45 stores and 99 departments. Machine learning algorithm, R programming was used for statistic computing. Henceforth, Holt Winters [4] was used for training dataset provided by Walmart and then sales prediction was done. Subsequently the predicted sales were given graphical representation using Tableau interactive data visualization. In [7], [9]–[14], the authors have recommended Apache Spark as a better option in terms of faster and having a very intel-ligent way of processing data in-memory (memory caching), rather than reading it back and again from the disk all the time.

SURVEY 2

Impact of big data analytics on sales performance in pharmaceutical organizations

AUTHOR

Shahbaz M, Gao C, Zhai L, Shahzad F, Luqman A, Zahid R (2021) Impact of big data analytics on sales performance in pharmaceutical organizations

HIGHLIGHTS OF THIS PROJECT

In this era of technology development, every business wants to equip its salesforce with a sustainable salesforce automation system to improve sales performance and customer relationship management (CRM) capabilities. This study investigates the impact of big data analytics (BDA) on CRM capabilities and the sales performance of pharmaceutical organizations. A research model was tested based on 416 valid responses collected from pharmaceutical companies through a structured questionnaire. Structural equation modeling (SEM) was employed using Smart-PLS3 to confirm the contribution of BDA to improving CRM capabilities and sales performance. The study finds that individual characteristics such as self-efficacy, playfulness, and social norms, along with organizational characteristics such as voluntariness, user involvement, user participation, and management support, are positive predictors of salesforce perception of BDA. This positive perception of BDA increased the person-technology fit in the salesforce, which ultimately increased the CRM capabilities and sales performance.

SURVEY 3

Best Selling Product and Category Prediction Using Sales Analysis

AUTHOR

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HIGHLIGHTS OF THIS PROJECT

A sales analysis is a detailed report that tells about more profound understanding of a business's sales performance, customer data, and the revenue. This tells you which deals are worth chasing and which are better left behind. Also, for the deals your sales team does decide to pursue, they'll have a good approach ready to make the lead or customer more receptive to the sale. Using Sales Analysis helps to take retailers towards profit in this world of competition. Nowadays shopping malls keep the track of their sales data of each and every individual item for predicting future demand of the customer and update the inventory management as well. These data stores basically contain a large number of customer data and individual item attributes in a data warehouse. Further, anomalies and frequent patterns are detected by mining the data store from the data warehouse. The resultant data can be used for predicting future sales volume with the help of different machine learning techniques for the retailers like Big Mart. A predictive model is build using different algorithms. In this paper, we investigate forecasting sales for a Big Mart, with four machine learning algorithms (Random Forest, Linear Regression, Decision Tree and XG Booster Algorithms). The results show that the Random Forest algorithm performs better than the other two models.

SURVEY 4

Use of Uncertain External Information in Statistical Estimation

AUTHOR

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HIGHLIGHTS OF THIS PROJECT

A product's life cycle hinges on its sales. Product sales are determined by a combination of market demand, industrial production, logistics, supply chains, labor hours, and countless other factors. Business-specific questions about sales are often formalized into questions relating to specific quantities in sales data. Statistical estimation of these quantities of interest is crucial but restricted availability of empirical data reduces the accuracy of such estimation. For example, under certain regularity conditions the variance of maximum likelihood estimators cannot be asymptotically lower than the Cramer-Rao lower bound. The presence of additional information from external sources therefore allows the improvement of statistical estimation. Two types of additional information are considered in this work: unbiased and possibly biased. In order to incorporate these two types of additional information in statistical estimation, this manuscript minimizes mean squared error and variance. Publicly available Walmart sales data from 45 stores across 2010-2012 is used to illustrate how these statistical methods can be applied to use additional information for estimating weekly sales. The holiday effect (sales spikes during holiday weeks) adjusted for overtime trends is estimated with the use of relevant external information.

SURVEY 5

Prediction of Quality Food Sale in Mart Using the AI-Based TOR Method

AUTHOR

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HIGHLIGHTS OF THIS PROJECT

John McCarthy invented the term artificial intelligence (AI) in 1956, defining it as "the science and engineering of creating artificial intelligence machines." +at which we refer to as the simulation of human intelligence that is processed by machines is what we are talking about today. Cortana, Siri, and Google Assistant are the most prevalent artificial intelligence systems that we encounter in our daily lives. Since its inception, AI has undergone a significant transformation. Previously, AI has been able to do this through developing robots and machines that have been employed in a variety of disciplines, including ro- botics, space exploration, marketing, and healthcare. AI is also involved in the development of business analytics software, among other things. We often think of artificial intelligence as a robot or machine that performs our daily tasks, but we do not realise that it has always been present in our lives. For example, the Google search engine that we use is an example of AI that provides accurate search results even if we input something that is related to our desired output. Because they share a common application, AI, ML, and DL are frequently confused as being the same thing. AI is the science of teaching machines to mimic human behaviors, ML is the subset of AI that makes decisions based on the data fed into it, and DL is the subset of ML that uses neural networks to solve difficult problems.