Intelligent Business Operations Using Machine Learning

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Abstract- *In todays World, social media is generating a vast amount of sentiment rich data in the form of tweets, status updates, blog posts etc. Twitter is a very fast emerging micro-blogging social networking platform for users to express their views about products, politics, sports etc. These views are useful for indivisuals, business and government. In this paper, we try to analyse the twitter post using machine learning algorithm. In this research, by using twitter as data sourse, we try to analyse the twitter post related to pro ducts like electronic products, household products, any objects using machine learning approach..*

Keywords- Sentimental analysis, Machine learning techniques, Twitter.

I. INTRODUCTION

Sentiment is an attitude, thought, or judgment prompted by feeling. Sentiment analysis, which is also known as opinion mining, studies people's sentiments towards certain entities. Internet is resourceful place where huge amount of sentimental data are generated every single second through micro-blogs, forums, social media sites like facebook, twitter, instagram, etc.

Sentiments are nothing but feelings respect to event. Sentiment Analysis is to determine the opinion of user related to some event or the statement describe the emotion of the user i.e. what he/she feel about it. Users share the things about their ongoing life, discuss current issues and variety of topics.From a researcher's perspective, many social media sites release their own sites application programming interfaces (APIs), persuasion of data collection and analysis by developers and researchers. Twitter currently has three different versions of APIs available, namely the Streaming API, the REST API, and the Search API. REST API helps the developers to gather the status data and user information. Search API allows developers to query specific Twitter content. With the help of this API, we can analyse the users opinion on particular product and conclude how many people like this product. For this machine learning approach are useful to analyse the twitter data.

II. LITERATURE REVIEV

Tsan-Ming Choi, Hing Kai Chan, Xiaohang Yue [1] presented a paper which summerizes future key research areas like Technological advances, business intelligence and system security and Reliability and operational risk manangement. For that purpose their are many beneficiary data collection in the related industrial system(e.g, wireless sensor networks and internet based systems). Daniele Cenni, Paolo Nesi, Gianni Pantaleo, Imad Zaza [2] designed a cross-domain, multi-user tool for collecting and analyzing Twitter data, providing aggregated metrics based on the volume of tweets and retweets, users influence network, Natural Language Processing and Sentiment Analysis of textual content. Neha Garg and Rinkle Rani [3] designed a system in which twitter REST API is used for the data extraction. R language is used for the data preprocessing,acquisition and visualization of the clustered data. K-means clustering algorithm is used for processing tweets which contains geotagged information.Thienrawish Pitchayaviwat [4] presented a study on clustering customer suggestion on online social media about insurance services by using tehniques like K-means and Self Organization Map(SOM). Rohit Joshi and Rajkumar Tekchandani [5] done comparative analysis classifiers like Naïve Bayes, support vector machines and maximum entropy using unigram, bigram and hybrid (unigram + bigram) feature . Pragya Juneja and Uma Ojha [6] used machine learning algorithm to predict the Delhi Corporation Elections results. Chae Won Park and Dae Ryong Seo [7] presents the system to analyse the users opinion on different Artificial Intelligence Assistance like cortana, siri and google assistance. Anuja P Jain and Asst. Prof Padma Dandannavar [8] gave the step-by-step detail about the process of sentiment analysis on twitter data using machine learning. they used Naïve Bayes and Decision trees machine learning algorithms for sentiment analysis in the proposed framework. Neethu M S and Rajasree R [9] gives analysis of twitter posts about electronic products like mobiles, laptops etc using Machine Learning approach. They used different classification technique Nave Bayes Classifier, SVM Classifier, Maximum Entropy Classifier and Ensemble classifier.

III. PROPOSED SYSTEM

In our proposed system, we are analysing real time as well as offline data for real time applications. Our big data analysis architechure divided into three parts : 1) Data Acquisition Unit 2) Data Processing Unit and 3) Data Analysis and Decision Unit. In this analysis we are using different techniques and algorithms to analyse data. The working and functionality are shown in diagram in below :

A. Data Acquisition Unit :

The proposed unit is introduced in the real time Big Data processing framework that gathers the massive volume of data from various available data gathering unit i.e. twitter (in our case) around the world. For effective data analysis, Base system is preprocesses the gathered data using different techniques which helps to reduce the storage cost as well as gives better analysis accuracy. Some relational data pre-processing techniques are data integration, data cleaning, and redundancy elimination. Due to motion of the platform, data must be corrected to remove distortions. We divided the data processing procedure into two steps, such as real-time Big Data processing and offline Big Data processing. In the case of offline data processing, the System transmits the data to the data centre to store the data. For future analyses, this data is used. However, in real-time data processing, the data are directly transmitted to the filtration and load balancer server, since storing of incoming real-time data degrades the performance of real-time processing.
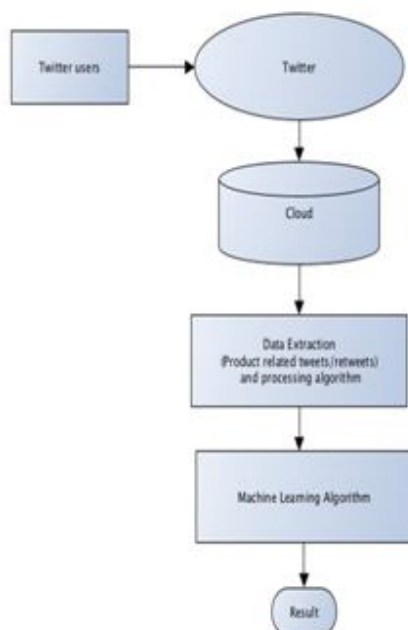
B. Data Processing Unit :

Main functionalities of this unit are filteration and load balancer. In filteration method, data is filtered which is useful for our analysis and blocks the other data. Due to filteration, our system's performance improves as we blocks the unwanted data. Load balancer is part of server it will provide a provision of dividing data into parts and assign them to the various processing servers. Each processing server has its own algorithm implementation for processing incoming segment of data from load balancer. Different mathematical tasks are performed on servers parallel and independently such that the performance of system is increased at an extent and result segments are generated in real time. The results generated by each server are then sent to the aggregation server for compilation, organization, and storing for further processing.

C. Data Analysis and Decision :

This unit contains three major functions, such as aggregation and compilation server, results storage server, and decision making server. Data are coming from different servers, so we have to aggregate this various data and store them for future processing. To store the organised results into the storage, many aggregation algorithms are implied in this unit. For decision making, the aggregation server sends the copy of same result to the server.

IV. CONCLUSION

This paper introduce the sentimental analysis approach for business operations. It gives the detail about twitter API's, sentimental analysis. In our proposed system, we are going to extract data through Twitter API and analyzing it using Machine learning Algorithms. This analysis would help in future for taking business decision for marketing purpose.

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