**LITERATURE SURVEY**

**[1].”Predicting Twitter Hashtags Popularity Level”, Shing H. Doong Department of Information Management ShuTe University, 2016 49th Hawaii International Conference on System Sciences**

In the beginning predicting the popularity of hashtags need to choose a reliable set of predictors.Hashtag content is considered to be very impotant for for its popularity.Viral tags spread very quickly.In this paper prediction algorithm is used to describe some of the features of predicting twitter hashtags.Data collection and feature extraction were two main tasks to perform the experimental procedure.

**[2].”A Survey of Sentiment Analysis techniques”,Harpreet Kaur,UIET, Panjab university,Chandigarh, India, International conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC 2017)**

In this paper some of the important notions of sentiment analysis are identified such as subjectivity,polarity and sentiment level.sentiment analysis is a process of analyzing emotions for a piece of text for some given topic.the two main approaches given in this paper are subjective lexicon approach and corpus based approach for classifying the sentiments.

**[3].”Study of Twitter Sentiment Analysis using Machine Learning Algorithms on Python” ,Bhumika Gupta, PhD Assistant Professor, C.S.E.D G.B.P.E.C, Pauri, Uttarakhand, India M, International Journal of Computer Applications (0975 – 8887) Volume 165 – No.9, May 2017**

This paper again deals with some sentiment analysis using machine learning algorithms like support vector machine algorithm.this analysis comes under text and opinion mining.for feature extraction they have used a term-frequency inverse document frequency approach which is a very efficient approach for a numerical statistics which gives a value of a word for the entire document.

[4] **“Deep Convolutional Neural Networks for Sentiment Analysis of Short Text “,C´ıcero Nogueirados Santos Brazilian Research Lab IBM Research, Proceedings of COLING 2014, the 25th International Conference on Computational Linguistics: Technical Papers, pages 69–78, Dublin, Ireland, August 23-29 2014.**

This paper presents a new deep neural network architecture that jointly uses character-level, wordlevel and sentence-level representations to perform sentiment analysis of short texts. The main contributions of the paper are:

(1) the idea of using convolutional neural networks to extract from character- to sentencelevel features;

(2) the demonstration that a feed-forward neural network architecture can be as effective as RNTN (Socher et al., 2013a) for sentiment analysis of sentences;

(3) the deﬁnition of new state-ofthe-art results for SSTb [Stanford Sentiment Treebank, which contains sentences from movie reviews;] and STS[Stanford Twitter Sentiment corpus, which contains Twitter messages] corpora.

[5] **“Large-Scale Sentiment Analysis for News and Blogs “,Manjunath Srinivasaiah , Dept. of Computer Science, Stony Brook University, Stony Brook, NY 11794-4400, USA**

Newspapers and blogs express opinion of news entities (people, places, things) while reporting on recent events. In this paper a system that assigns scores indicating positive or negative opinion to each distinct entity in the text corpus. This system consists of a sentiment identiﬁcation phase, which associates expressed opinions with each relevant entity, and a sentiment aggregation and scoring phase, which scores each entity relative to others in the same class. Finally, evaluated the signiﬁcance of scoring techniques over large corpus of news and blogs.

[6] **“Sentiment Analysis of Twitter Data: A Survey of Techniques “,Vishal A. Kharde, S.S. Sonawane , International Journal of Computer Applications (0975 – 8887) Volume 139 – No.11, April 2016**

In this paper, we provide a survey and a comparative analyses of existing techniques for opinion mining like machine learning and lexicon-based approaches, together with evaluation metrics. Using various machine learning algorithms like Naive Bayes, Max Entropy, and Support Vector Machine, we provide research on twitter data streams. The paper concludes that more the cleaner data, more accurate results can be obtained. Also concluded that use of bigram model provides better sentiment accuracy as compared to other models.

[7] **“Automatically Determining Attitude Type and Force for Sentiment Analysis ”, Shlomo Argamon, Kenneth Bloom, Andrea Esuli, and Fabrizio Sebastiani, Linguistic Cognition Laboratory Department of Computer Science Illinois Institute of Technology 10 W. 31st Street – Chicago, IL 60616, USA**

This paper described a method for the automatic determination of complex sentiment-related attributes such as attitude type and force, by applying supervised learning to WordNet glosses. This paper explains how information contained in dictionary glosses can be exploited to automatically determine the type and force of attitudes expressed by terms. Experimental results show that the method achieves good eﬀectiveness, and is therefore well-suited to contexts in which these lexicons need to be generated from scratch.

**[8] “Machine Learning-Based Sentiment Analysis for Twitter Accounts”, Ali Hasan, Sana Moin, Ahmad Karim and Shahaboddin Shamshirband , Math. Comput. Appl. 2018, 23, 11**

This paper includes the adoption of a hybrid approach that involves a sentiment analyzer that includes machine learning. Moreover, this paper also provides a comparison of techniques of sentiment analysis in the analysis of political views by applying supervised machine-learning algorithms such as Naïve Bayes and support vector machines (SVM).This paper focuses on the adoption of various sentiment analyzers with machine-learning algorithms to determine the approach with the highest accuracy rate for learning about election sentiments. In a lexicon-based sentiment analysis ,semantic orientation is of words,phrases or sentences calculated in a document. Polarity in the lexicon-based method is calculated on the basis of the dictionary, that consists of a semantic score of a particular word. However, the approach of machine learning is basically destined to classify the text by applying algorithms such as Naïve Bayes and SVM on the ﬁles. This research is focused on providing a comparison between sentiment lexicons (W-WSD, SentiWordNet, TextBlob) so that the best can be adopted for sentiment analysis. Three of the sentiment analysis lexicons with two machine-learning algorithms are validated . As a result, sentiments from three analyzers named SentiWordNet, TextBlob, and W-WSD are calculated.

**[9]. “A Study on Sentiment Analysis Techniques of Twitter Data”, Abdullah Alsaeedi1 , Mohammad Zubair Khan2 Department of Computer Science, College of Computer Science and Engineering Taibah University Madinah, KSA, (IJACSA) International Journal of Advanced Computer Science and Applications, Vol. 10, No. 2, 2019**

In this article, diverse techniques for Twitter sentiment analysis methods were discussed, including machine learning, ensemble approaches and dictionary (lexicon) based approaches. In addition, hybrid and ensemble Twitter sentiment analysis techniques were explored. Research outcomes demonstrated that machine learning techniques; for example, the SVM and MNB produced the greatest precision, especially when multiple features were included. SVM classifiers may be viewed as standard learning strategies, while dictionary (lexicon) based techniques are extremely viable at times, requiring little efforts in the human-marked archive. Machine learning algorithms, such as The Naive Bayes, Maximum Entropy, and SVM, achieved an accuracy of approximately 80% when n-gram and bigram model were utilized. Ensemble and hybrid-based Twitter sentiment analysis algorithms tended to perform better than supervised machine learning techniques, as they were able to achieve a classification accuracy of approximately 85%.

**[10]. “Knowledge Discovery in Hashtags#”, Rizwan Mehmood 1 , Hermann Maurer1 and Muhammad Tanveer Afzal 2 1 Institute for Information Systems and Computer Media, Graz University of Technology 1Graz, Austria 2Center for Distributed and Semantic Computing, Mohammad Ali Jinnah University Islamabad, Pakistan**

The long term goal of this research resides in applying KDD process and visual analytics for knowledge discovery in different domains. This paper illustrated that how KDD process can be used for extracting knowledge from hashtags. The main stream of applications is visualization applications which should be used to visualize knowledge. The combination of knowledge discovery and visualization techniques help in the understanding of complex patterns.

**Reasearch Gap**

The research gap of above referred papers are , since sentiment analysis is on natural language texts which is a large and growing field , which therefore requires the construction of large and complex lexicons, giving values for multiple sentiment-related attributes to many diﬀerent lexical items , which will make the sentiment analysis complicated .

We may face the following challenges while analyzing :

* Identifying subjective parts of text
* Domain dependence
* Sarcasm Detection
* Explicit Negation of sentiment
* Handling comparisons

**Objective**

This proposed project involves classification of tweets into two main sentiments: positive and negative. In this project, we will go through making a Python program that analyzes the sentiment of tweets on a trending hashtags(#) , which will overcome the above research gap.