International Journal of Recent Technology and Engineering (IJRTE)
ISSN: 2277-3878 (Online), Volume-8 Issue-4, November 2019

Twitter Sentiment Recognition using Support Vector Machine

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***Abstract**: In this we explore the effectiveness of language features to identify Twitter messages ' feelings. We assess the utility of existing lexical tools as well as capturing features of informal and innovative language knowledge used in micro blogging. We take a supervised approach to the problem, but to create training data, we use existing hash tags in the Twitter data. We Using three separate Twitter messaging companies in our experiments. We use the hash tagged data set (HASH) for development and training, which we compile from the Edinburgh Twitter corpus, and the emoticon data set (EMOT) from the I Sieve Corporation (ISIEVE) for evaluation. Twitter contains huge amount of data . This data may be of different types such as structured data or unstructured data. So by using this data and Appling pre processing techniques we can be able to read the comments from the users. And also the comments will be classified into three categories. They are positive negative and also the neutral comments.Today they use the processing of natural language, information, and text interpretation to derive and classify text feeling into pos itive, negative, and neutral categories. We can also examine the utility of language features to identify Twitter mess ages ' feelings. In addition, state-of - the-art approaches take into consideration only the tweet to be classified when classifying the feeling; they ignore its context (i.e. related tweets).Since tweets are usually short and more ambiguous, however, it is sometimes not enough to consider only the current tweet for classification of sentiments.Informal and innovative microblogging language. We take a sup ervised approach to the problem, but to create training data, we use existing hashtags in the Twitter data.This paper also contrasts sentiment analysis approaches in evaluating political views using Naïve Bayes supervised machine learning algorithm which performs in better analysis compared to other techniques Paper*

***Keywords** : Hash tagged data set(HASH), emoticon data set (EMOT), Naïve Bayes, supervised.*

Manuscript published on November 30, 2019.

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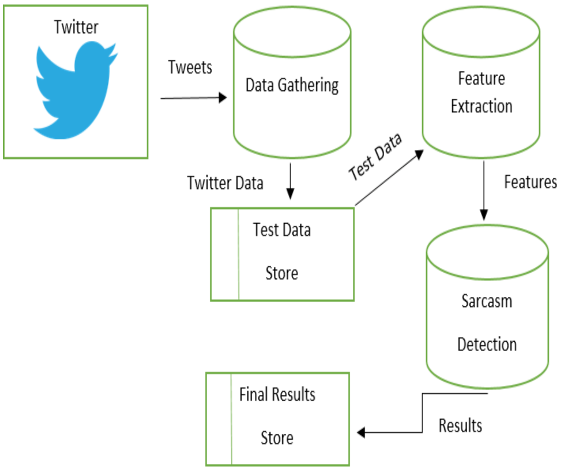
I. INTRODUCTION

The process of computationally identifying and categorizing opinions expressed in a piece of text, especially in order to determine whether the writer's attitude towards a particular topic, product, etc. is positive, negative, or neutral is called sentiment analysis.Sentiment analysis also known as opinion mining (Pang and Lee, 2008; Liu, 2012), is a basic role in the analysis of natural language and computer linguistics. Analysis of sentiment is important for understanding user-generated text in social networks or product reviews, and has attracted a lot of interest from both industry and academia.As a micro-blogging platform, Twitter allows users to publish tweets of up to 140 characters in length to tell everyone what they're doing, what they're feeling, or what's going on around them. Face book has become very famous over the past couple of years. According to Pieria's new Twitter entry, the number of Twitter users has risen to 190 million and the number of tweets posted on Twitter every day is over 65 million.Due to the fast-growing number of tweets, the feelings of mining people expressed in tweets have attracted increasing attention. However, most Internet-based websites now offer a Twitter sentiment search service, such as Tweet feel 2, Twendz3, and Twitter Sentiment. The method has often been used to classify documents or sentences with feelings. Nonetheless, it is not easy to apply in our case because it is labor-intensive and time-consuming to manually tag a large set of tweet instances. In addition, manual labeling must be performed for each application domain.As it is well known that a sentiment classifier can perform very well in the domain it is trained, but perform poorly when applied to a different domain (Aue and Gamon, 2005).Using features like unigrams or bigrams, the machine learning-based approach typically trains feeling classifiers (Pang et al. 2002). By applying different learning techniques such as Naive Bayes, Maximum Entropy, and Support Vector Machines, most techniques use some form of supervised learning.For each application domain, such methods require manual labeling of [1]training examples.A lot of people have been drawn to social networking sites such as Face book, Twitter and Instagram in recent years.Most use social sites to express their feelings, opinions, or views about events, locations, or personalities. Sentiment analysis approaches can be primarily classified as machine-learning, lexicon-based and hybrid. Similarly, the types of numerical, knowledge-based and hybrid methods are presented[2]

A keyword-based tweet collection focusing on the names of Pakistan's political parties and political celebrities was created to test the party's support for the 2013 vote. This dataset has been analyzed using both supervised and unsupervised algorithms for machine learning.Using the Rainbow tool, Prind, K nearest neighbors and Naïve Bayes were applied

II. LITERATURE SURVEY

Data Mining is the method by which numerical, computational, artificial intelligence and Data mining twitter feeds have become the priority of most businesses and other organizations such as education to discover the user's opinion (Fornacciari, Mordonini, & Tomaiuolo , 2015).Opinion



Mining also called sentiment analysis, it is the field of study that analyses people's opinions, sentiments, evaluations, appraisals, attitudes, and emotions towards entities such as products, services, organizations, individuals, issues, events.

III. PROPOSED METHOD

A. Pos Tagging:

The process of classifying words into their parts of speech and labeling them accordingly is called as part-of-speech tagging. Marking up a word in a text as corresponding to a particular parts of speech, is based on both its definition and its relationship with adjacent and related words in a phrase, sentence, or paragraph.Parts of speech is of 9 types they are Verb, Noun, Adjective, Determiner, Adverb, Pronoun, Preposition, conjunction, interjection.There are 2 steps into which is involved on POS tagging Tokenization.Applying to the pos-tag to the above step.Tokenization: Dividing the text into words. And assigning to present in a token to each word is called tokenization.Applications of POS tagging Text to Speech Conversion Word Sense Disambiguation.Postagging can [8]not be the solution to any particular NLP issue. However, it is something that is done to simplify a lot of diFeren t issues as a pre-requisite. Let's consider a few POS tagging applications in differ ent NLP tasks.POS-tagging algorithms types of POS taggers fall into two distinctive groups Rule-based POS Taggers Stochastic POS Taggers Brill's tagger, one of the most commonly used English POS taggers, uses rule-based algorithms. Let's look Nest at a very brief description of what is all about rule-based tagging.

B. Rule-based tagging

[3]Automatic voice tagging is a natural language processing field where statistical techniques were more effective than rule-based methods.Using contextual information, traditional rule-based methods assign tags to unknown or ambiguous phrases. Disambiguation occurs by the study of the word's linguistic features, its corresponding word. its preceding word, its following word, and other aspects.

III.STOCHASTIC PART-OF-SPEECH TAGGING

[4]The word ' stochastic tagger' may refer to the problem of POS tagging with any number of different approaches. Any model that integrates frequency or probability can be stochastic properly labeled.The simplest stochastic taggers disembogue terms based solely on the possibility that a word will occur with a specific tag. In other words, the tag most frequently found in the training set with the word is the one assigned to that word's ambiguous case. The problem with this approach is that while it may yield an appropriate tag for a particular word, it may also yield inappropriate tag sequences.An alternative to the approach to word frequency is to calculate the probability of the sequence for tags that occur. This is sometimes referred to as the n-gram method, referring to the fact that it is determined by the likelihood that the best tag for a given word exists with the previous n tags. This approach makes much more sense than the one denned before, since it considers context-based tags for individual words.

IV. WORD SENSE DISAMBIGUATION

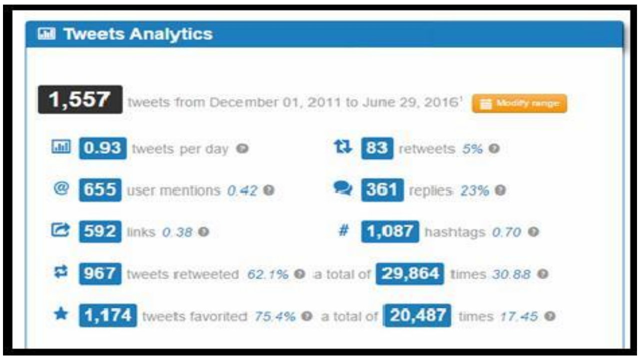
[5]In regular language preparing, word sense disambiguation (WSD) is the issue of figuring out which "sense" (meaning)of a word is initiated by the utilization of the word in a specific setting, a procedure which has all the earmarks of being generally oblivious in individuals. WSD is a characteristic arrangement issue: Given a word and its potential detects, as characterized by a lexicon, [6]order an event of the word in setting into at least one of its sense classes.The highlights of the unique situation, (for example, neighboring words) give the proof to classification.Machine interpretation is the most evident and unique application for WSD,[7] yet WSD has been considered in pretty much every applica tion of language innovation, including data recovery, lex icography, information mining obtaining and semantic interpre tation, and is getting progressively significant in new territories of re search, for example, bioinformatics and the Semantic Web.

IV. TOKENIZATION

The first step is tokenization, the process of separating text into appropriate units (characters, letters, phrases, etc.). Such units ar e called tokens, and word-level tokenization will be used.

A.Naivebayes

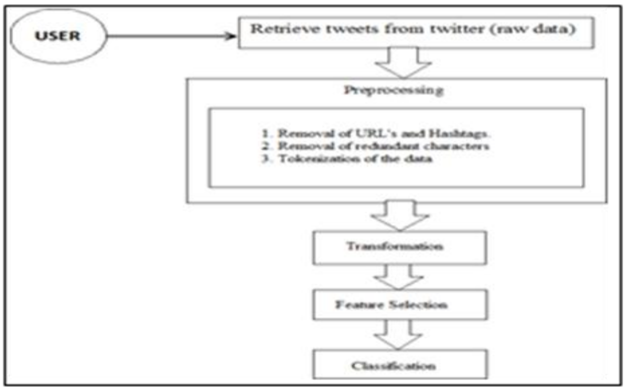
This Paper keeps an eye on the speculation and execution of the Naive Bayes classifiers.Naive Bayes classifiers are a combination of Bayes ' Theorem-based course of action estimations. It's definitely not a singular estimation, anyway a gathering of computations wherein they all offer a run of the mill rule, for instance each pair of features that are portrayed is free of each other.



The recognizable proof of tweets by target-subordinate notion. The contribution of our venture is in this way a lot of tweets containing the objective and the yield is marks appointed to each tweet.Inspired by (Barbosa and Feng, 2010; Pang and Lee, 2004), this paper proposes a three-advance approach.Classification of subjectivity as the initial phase in choosing whether the tweet is abstract or impartial to the targetClassification of extremity as the subsequent advance in deciding if the tweet is certain or negative about the objective when characterized as emotional in Step 1.Graph-based improvement as the third means to additionally upgrade execution by taking the related with a straight portion.

V. TARGET-DEPENDENT SENTIMENT CLASSIFICATION

Lexicon-based approaches use a predefined list of words in which each word is correlated with a particular feeling. The lexicon methods differ depending on the context in which they were produced and include measuring a document's orientation from the semantic orientation of the documents ' texts or phrases. Furthermore, also notes that a lexicon sentiment is to detect in the corpus word-carrying opinion and then anticipate the opinion expressed in the text. demonstrated the methods of the lexicon with a simple paradigm.Pre-process each tweet, post by deleting the punctuation. Initialize a score(s) with maximum polarity equal to 0 -> s=0Test if token is present in a dictionary, s will be positive (+) if token is neutral, s will be negative-)Look at the total polarity score of tweet post If s > threshold, tweet post as positive If s < threshold, tweet post as negative However,[21] highlighted one advantage of leaning-based method, is that it has the ability to adapt and create trained



models for specific purposes and contexts.In contrast, an availability of labeled data and hence the low applicability of the method of new data which is cause labeling data might be costly or even prohibitive for some tasks.

VI. ARCHTECTURE OF SENTIMENT ANALYSIS

```
> library(dplyr)
> library(twitteR)
> library(knitr)
> library(ggplot2)
> library(Snowballc)
> library(tm)
> library(twitteR)
> library(syuzhet)
> api_key <- "PlNfIDLEnH91GidKetN8e4WMr"
>
> api_secret <- "HUjTpguW815dJaD2q4PHcqasdIUFQngU8DOBV1RkEFVchfeut7"
> token <- "809816667966541824-lvKShTgEHfDIgVACJJcY5Jt7ESP7ITT"
> token_secret <- "AV6W16ZMqOrT4cUzQsCZVEuWJOKMON5ywcUIenkALmR9Q"
> setup_twitter_oauth(consumer_key = api_key,
+                     consumer_secret = api_secret,
+                     access_token = token,
+                     access_secret = token_secret)
[1] "Using direct authentication"
> tweets <- searchTwitter("#jrntr", n=100, lang="en")
> tweets.df <- twListToDF(tweets)
> tweets.df$text=gsub("&amp", "", tweets.df$text)
> tweets.df$text = gsub("&amp", "", tweets.df$text)
> tweets.df$text = gsub("(RT|via)((?:\\b\\W*@\\w+)+)", "", tweets.df$text)
> tweets.df$text = gsub("@\\w+", "", tweets.df$text)
> tweets.df$text = gsub("[[:punct:]]", "", tweets.df$text)
> tweets.df$text = gsub("[[:digit:]]", "", tweets.df$text)
> tweets.df$text = gsub("http\\w+", "", tweets.df$text)
> tweets.df$text = gsub("[ \t]{2,}", "", tweets.df$text)
> tweets.df$text = gsub("^\\s+|\\s+$", "", tweets.df$text)
> tweets.df$text <- iconv(tweets.df$text, "UTF-8", "ASCII", sub="")
> tweets.df$text
 [1] "Can we actually expect you working with JrNtr or maybe a full fledged Telugu movie\n\nAskAtlee"
 [2] "Major throwback TwinningMoments ThrowbackThursday \n\nMaheshBabu JrNTR Raviteja PawanKalyan "
 [3] "All The BestBigil Whistle FromFans\n\nATBBigilFromNTRFans \n\nBigilDiwali BigilFromTomorrow"
 [4] "Can we actually expect you working with JrNtr or maybe a full fledged Telugu movie\n\nAskAtlee"
 [5] "Major throwback TwinningMoments ThrowbackThursday \n\nMaheshBabu JrNTR Raviteja PawanKalyan "
 [6] "THE MASSIVE THREE\nBollywood Tollywood kollywood\nApart frm their fans majority of the public r curious to listen their"
 [7] "This Babai Abbai bonding is love \nTheirBonding NandamuriBalakrishna JrNtr NandamuriKalyanRam NTRBiopic "
 [8] "This Babai Abbai bonding is love \nTheirBonding NandamuriBalakrishna JrNtr NandamuriKalyanRam NTRBiopic "
 [9] "Bigil BigilDiwali \nWhistle WhistleDiwali \nGrand Release Tomorrow \n\nDesign\n\nBigilFromTomorrow \nWhistle"
[10] "Major throwback TwinningMoments ThrowbackThursday \n\nMaheshBabu JrNTR Raviteja PawanKalyan "
[11] "Hit movies \n\nBB Mahanati TRP Rating\nBB ASVR TRP Rating\n\nKeerthi Suresh Tho gudda Meedha ThanninchuKunna"
[12] "JrNTR fans wish for Thalapathy Vijay Bigil\n Tarak NTR BigilDiwali BigilFromFriday BigilBoxOfficeEntryTom"
[13] "Sir want to hear about jrntr from you AskAtlee"
[14] "Major throwback TwinningMoments ThrowbackThursday \n\nMaheshBabu JrNTR Raviteja PawanKalyan "
[15] "JrNTR fans wish for Thalapathy Vijay Bigil\n Tarak NTR BigilDiwali BigilFromFriday"
[16] "Major throwback TwinningMoments ThrowbackThursday \n\nMaheshBabu JrNTR Raviteja PawanKalyan "
[17] "Who has more fanbase\nkalyanram Balayya jrntr srntr"
[18] "Who has more fanbase\nkalyanram Balayya jrntr srntr"
[19] "This Babai Abbai bonding is love \nTheirBonding NandamuriBalakrishna JrNtr NandamuriKalyanRam NTRBiopic "
[20] "Who has more fanbase\nkalyanram Balayya jrntr srntr"
[21] "This Babai Abbai bonding is love \nTheirBonding NandamuriBalakrishna JrNtr NandamuriKalyanRam NTRBiopic "
[22] "This Babai Abbai bonding is love \nTheirBonding NandamuriBalakrishna JrNtr NandamuriKalyanRam NTRBiopic "
[23] "Hit movies \n\nBB Mahanati TRP Rating\nBB ASVR TRP Rating\n\nKeerthi Suresh Tho gudda Meedha ThanninchuKunna"
[24] "THE MASSIVE THREE\nBollywood Tollywood kollywood\nApart frm their fans majority of the public r curious to listen their"
[25] "Sir want to hear about jrntr from you AskAtlee"
[26] "ALL THE BEST TO YOU\nBigilDiwalifrom JrNTRFans\n\nchittoor \nAndhraPradesh "
[27] "Major throwback TwinningMoments ThrowbackThursday \n\nMaheshBabu JrNTR Raviteja PawanKalyan "
[28] "Who has more fanbase\nkalyanram Balayya jrntr srntr"
[29] "Sir want to hear about jrntr from you AskAtlee"
[30] "This Babai Abbai bonding is love \nTheirBonding NandamuriBalakrishna JrNtr NandamuriKalyanRam NTRBiopic "
[31] "Major throwback TwinningMoments ThrowbackThursday \n\nMaheshBabu JrNTR Raviteja PawanKalyan "
[32] "THE MASSIVE THREE\nBollywood Tollywood kollywood\nApart frm their fans majority of the public r curious to listen their"
[33] "Expecting a tweet frm JrNTR on Bigil movie tmrw\nAswho brought Whistle rights is NTRs PRO\nThe bonding NT"
[34] "Bigil director Atlee hints at collaborating with JrNTR for a Telugu film\nBigilDiwali ThalapathyVijay"
[35] "Expecting a tweet frm JrNTR on Bigil movie tmrw\nAswho brought Whistle rights is NTRs PRO\nThe bond"
[36] "THE MASSIVE THREE\nBollywood Tollywood kollywood\nApart frm their fans majority of the public r curious to listen their"
```

[9] Machine learning methods often rely on supervised approaches to classification where sensitivity detection is represented as a positive and negative binary.To train classifiers, this approach requires marked data[21]. This approach makes it clear that elements of a word's local context such as negative (e.g. not beautiful) and intensification (e.g. really beautiful) need to be taken into account.But showed a simple paradigm for constructing a vector of features is: i. Add to each tweet post ii a part of the speech tagger. Select all tweet adjectives for all iii articles. Make a popular word set consisting of top N adjectives.

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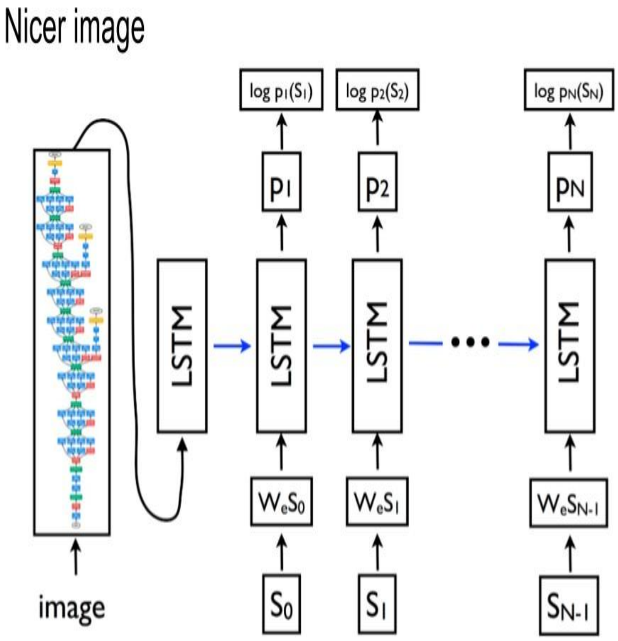
VII. SUPPORT VECTOR MACHINE

A Support Vector Machine is a discriminative classifier formally defined by a separating hyper plane. Support Vector Machine abbreviated as SVM can be used for both regression and classification tasks. It is highly preferred by many as it produces significant accuracy with less computation power. But it is widely used in classification objectives. The target of the help vector machine calculation is to discover a hyper plane in a N-dimensional space (N — the quantity of highlights) that unmistakably characterizes the information focuses. In AI, support-vector machines SVM are managed learning models with related learning calculations that examine information utilized for order and relapse investigation. Given a lot of preparing models, each set apart as having a place with either of two classes, a SVM preparing calculation constructs a model that allocates new guides to one classification or the other, making it a non-probabilistic paired straight classifier (in spite of the fact that techniques, for example, Platt scaling exist to utilize SVM in a probabilistic characterization setting.A SVM model is a portrayal of the models as focuses in space, mapped with the goal that the instances of the different classes are separated by a reasonable hole that is as wide as could be expected under the circumstances. New models are then mapped into that equivalent space and anticipated to have a place with a class dependent on the side of the hole on which they fall. Notwithstanding performing direct characterization, SVMs can productively play out a non-straight arrangement utilizing what is known as the portion stunt, verifiably mapping their contributions to high-dimensional component spaces.




```
> word.df <- as.character(tweets.df)
> emotion.df <- get_nrc_sentiment(word.df)
> emotion.df<-as.matrix(emotion.df)
> head(emotion.df)
     anger anticipation disgust fear joy sadness surprise trust negative positive
[1,]     3            6       1    2   2       2        1     5        3        9
[2,]     0            0       0    0   0       0        0     0        0        0
[3,]     0            0       0    0   0       0        0     0        0        0
[4,]     0            0       0    0   0       0        0     0        0        0
[5,]     0            0       0    0   0       0        0     0        0        0
[6,]     0            0       0    0   0       0        0     0        0        0
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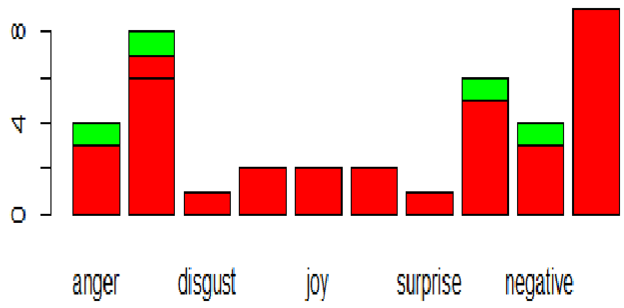

VII. RESULTS

Results for the proposed method are listed with the help of the Outputs which are shown below

VIII. CONCLUSION

This work gives an account of the structure of a notion investigation, removing immense number of tweets. Results group client's discernment by means of tweets into positive and negative. Furthermore, we examine system to do the wistful investigation on twitter information in detail.Examination of conclusion on Twitter has as of late gotten a lot of consideration. We handle target-subordinate inclination distinguishing proof of tweets in this paper.

Retrieval Number: D9414118419/2019©BEIESP
DOI:10.35940/ijrte.D9414.118419
Journal Website: www.ijrte.org

Published By:
Blue Eyes Intelligence Engineering
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Dif-ferent from past work utilizing objective free order, we propose to incorpo-rate syntactic highlights to recognize writings utilized for communicating opinions towards various focuses in a tweet.According to the trial results, the classifiers joining objective ward includes essentially beat the past target-autonomous classifiers.Using hashtags to gather preparing information proved valuable, as did utilizing information gathered dependent on positive and negative emojis. We have read different methodologies for feeling examination utilizing AI procedures like Naive Bayes, SVM and so on. The looks into have done the outline of occasions, constant occasion identification just as sentence based assumption characterization precisely and efficiently.Naive Bayes classifier is unfeeling toward unequal information which give increasingly exact outcomes.

REFERENCES

1. C. M. A. K. Z. Basha, M. Padmaja, G. N. Balaji, "Computer Aided Fracture Detection System", Journal of Medical Imaging & Health Informatics, vol. 8, no. 3, pp. 526-531, Mar. 2018.
2. CMAK Zeelan Basha, N Ch Rishi Vardhan, P Gowtham, V V Tanuja, “Automated Student Community Portal”, International Journal of Engineering and Advanced Technology (IJEAT), Vol.9 ,Issue-1, pp.4353-4355, Oct. 2019.
3. CMAK Zeelan Basha, T V Shanmuka Sharan, M Ravi Kishore Reddy, P S M Venkatesh,“Computer based Registration for Skill Development”, International Journal of Engineering and Advanced Technology, Vol.9 ,Issue-1,pp.5190-5193, Oct. 2019.
4. CMAK. Zeelan Basha, K. M. Sricharan, Ch. Krishna Dheeraj, R. Ramya Sri,“ A Study on Wavelet Transform Using Image Analysis”,International Journal of Engineering & Technology ,vol.7,pp.94-96,2018.
5. Cmak Zeelan basha, Azmira Krishna, Pradeep Raj Savarapu,“Automatic Detection of Lung Infection”, International Journal of Recent Technology and Engineering , Vol.8, Issue-3, pp.200-203,Sep. 2019.
6. Azmira Krishna, CMAK Zeelan Basha, Pradeep Raj Savarapu, Soumya Ranjan Nayak, S. Sivakumar,“Multi Target Tracking Accesswith Data Association in Distributed Camera Networks”, International Journal of Recent Technology and Engineering , Vol.8, Issue-2S11, pp.412-417,Sep.2019.
7. Azmira Krishna, Cmak Zeelan Basha, Syed Karimunnisa,“Computerized Face Detection and Tracking”, International Journal of Innovative Technology and Exploring Engineering , Vol.8 Issue-12,pp.2800-2802, Oct.2019
8. Shaik Razia, P.Swathi Pryathyusha, N.Vamsi Krishna “A Comparative study of machine learning algorithms on thyroid disease prediction” International Journal of Engineering and Technology(UAE), ISSN No: 2227-524X, Vol No: 7, Issue No: 2.8, Page No: 315-319, March 2018.
9. HAIK RAZIA, M.R.Narasingarao, “Development and Analysis of Support Vector Machine Techniques for Early Prediction of Breast Cancer and Thyroid” JARDCS (Journal of Advanced Research in Dynamical and Control Systems), ISSN: 1943-023X, Vol.9.Sp.Issue:6 page no: 869-878, 2017.
10. SHAIK RAZIA, M.R.NARASINGARAO “A Neuro computing frame work for thyroid disease diagnosis using machine learning techniques” JATIT (Journal of Theoretical and Applied Information Technology), ISSN: 1992-8645 www.jatit.org E-ISSN: 1817-3195, Vol.95. No.9. Pages 1996-2005, 15th May 2017.