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SEMINAR REPORT

ON

TWITTER SENTIMENT ANALYSIS USING PYTHON

BY

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GUIDED BY

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MIT ACADEMY OF ENGINEERING

ALANDI (D), PUNE

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DEPARTMENT OF COMPUTER ENGINEERING

CERTIFICATE

This is to certify that the seminar entitled "Twitter Sentiment Analysis using Python" has been carried out by Pranav Bawiskar and Manav Sharma under my guidance in partial fulfilment of Third Year Computer Engineering of Savitribai Phule Pune University, Pune during the academic year 2017-2018.

Mrs. Vaishali Wangikar
Seminar Guide

Dr. Shitalkumar. A. Jain
Head of the Department

ACKNOWLEDGEMENT

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Pranav Bawiskar and Manav Sharma

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ABSTRACT

It is often argued, if machines can understand emotions or sentiments like humans do. Is it possible to build a programme, which can justify the sentiments just by analysing a piece of text. Is it possible to know whether the content at hand is positive, negative or neutral? Yes it is!

A method of Opinion Mining, often referred to as Sentiment Analysis to extract sentiments by using classification algorithms. Sentiment analysis refers to the task of natural language processing to determine whether a piece of text contains some subjective information and what subjective information it expresses, i.e., whether the attitude behind this text is positive, negative or neutral. Understanding the opinions behind user-generated content automatically is of great help for commercial and political use, among others. The task can be conducted on different levels, classifying the polarity of words, sentences or entire documents.

In our approach, Tweepy API for python was used to extract tweets from Twitter Database. The basis of extraction were hashtags, which were the major highlight of twitter, the microblogging website.[6] Using Tweepy and polarity based algorithms; we were able to actually define, the positive, negative and neutral attributes of the text, and generate a percentage wise breakup, hence performing sentiment analysis.

KEYWORDS: Opinion Mining, Naïve Bayes, Sentiment Analysis

1. INTRODUCTION

1.1 Problem Statement

In recent history, feedback from users regarding people, product and management has led to serious consequences. Today, every major issue is a trending topic on Twitter. People talk about it, express their response and the cycle goes on and on. Hence, we have a huge response database with us in the form of twitter. But how to manage and extract all these sentiments from the tweets itself? How are we supposed to know what is the majority sentiment behind an issue?

There are billions of tweets associated to a specific issue and hence it is imperative that we find the sentiment behind them and generate a generic data from the database of tweets.

The problem at hand consists of these subtasks:

- Phrase Level Sentiment Analysis in Twitter:
    - Given a message containing a marked keyword, determine whether the message is positive, negative or neutral in that context.[4]

- Sentence Level Sentiment Analysis in Twitter:
    - Given a message, decide whether the message recorded is positive, negative or neutral sentiment. For messages conveying both a positive and negative sentiment, whichever is the stronger sentiment, it must be chosen. i.e. based on the POLARITY.

1.2 Project Background

To complete the project, it was necessary to acquire in depth knowledge of Python and it's Twitter API, Tweepy. It became imperative to learn about the sentiment analysis and its methods. In order to classify the text, it became necessary to define the parameters on the basis of which the tweets needed to be classified.[1] Those parameters were identified as the polarity of the text, based on which, meaningful conclusions could be drawn.

TextBlob is a Python library for processing textual data. It provides a simple API for diving into common natural language processing (NLP) tasks such as part-of-speech tagging, noun phrase extraction, sentiment analysis, classification, translation, and more.[2][3]

Features:

- Noun phrase extraction
- Part-of-speech tagging
- Sentiment analysis
- Classification (Naive Bayes, Decision Tree)
- Language translation and detection powered by Google Translate
- Tokenization (splitting text into words and sentences)
- Word and phrase frequencies
- Parsing
- n-grams
- Word inflection (pluralization and singularization) and lemmatization
- Spelling correction
- Add new models or languages through extensions

- WordNet integration

Also, to implement the Google Text to Speech Recognition and Talk Back System, Speech Recognition modules were studied and executed with the help of the documentation. However, the implementation inside the project was purely creative.[5]

In totality, many new features were required to learn since the background of the project was based on Classification Algorithms.

1.3 Objectives

To build a program in Python that fetches Tweets from Twitter, applies sentiment analysis techniques, and generates a percentage wise report of the number of positive, negative or neutral tweets from a set of defined number of tweets parsed.

To understand the limitations and shortcomings of the sentiment analysis and display the same.

To implement Google Text To Speech System in order to provide an interactive User Interface for the Program Application.

2. DESIGN DETAILS

2.1 UML Diagram

Use Case Diagram:

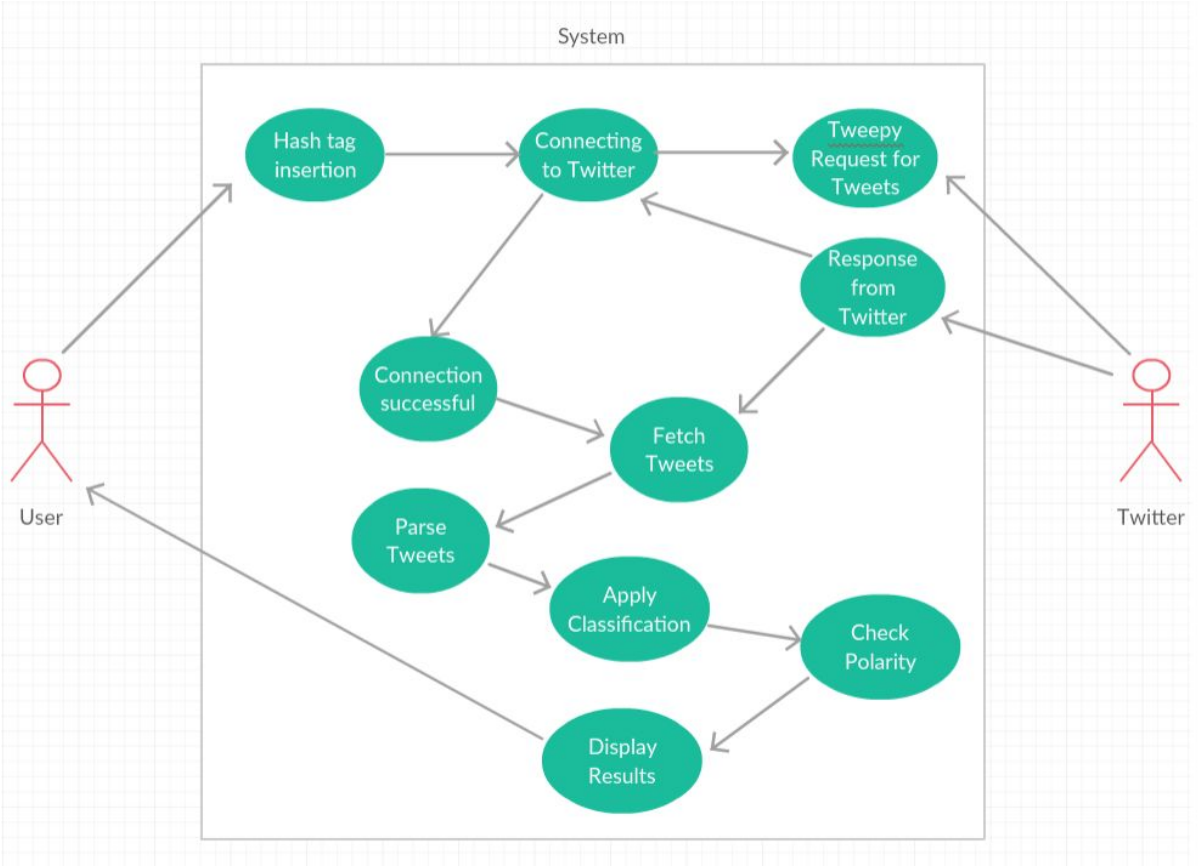

Fig. Use Case Diagram

3. IMPLEMENTATION DETAILS

3.1 Hardware and Software requirements

Hardware: 64 bit System, with an Internet Connection. Mic and Speakers for Talk back feature.

Software: Linux OS, Python 3.0 along with Tweepy api installed via pip. GTTS api installed in python for smooth functionality.

3.2 Environmental setup steps

Step 1: Install Python

1. Check if python is already installed on your system : $python –version
2. If Python 2.7 or later is not installed, install Python with your distribution's package manager. The command and package name varies

$sudo apt-get install python3

3. Check if python is now installed on your system: $python3 –version

Step 2: Installing API's

1. Tweepy - $sudo pip-install tweepy
2. Gtts - $sudo pip-install SpeechRecogniton $ sudo pip-install GTTS

3.3 Code

```
import re
import os
import speech_recognition as sr
import string
import tweepy
from tweepy import OAuthHandler
from textblob import TextBlob
from gtts import gTTS

r = sr.Recognizer()
mic = sr.Microphone()


positive = "percentage of positive Tweets"
negative = "percentage of negative Tweets"

class TwitterClient(object):
    '''
    Generic Twitter Class for sentiment analysis.
    '''
    def __init__(self):
        '''
        Class constructor or initialization method.
        '''
        # keys and tokens from the Twitter Dev Console
        consumer_key = 'etJIyIfap2vpvh6msXJzDXWB6'
        consumer_secret =
'UB0u0VmS1khnkYWQlg86m6ducx6H9aomVNNtKoHiTxQAi8wwZT'
        access_token = '955354170944471040-ymf4CdfobcpphzMXnFxVU81bpOK36HU'
        access_token_secret = 'tYgOYOvkVAk0K15DCpsnH3yYEp5sF0YgZ8A9udrG4IedV'

        # attempt authentication
        try:
            # create OAuthHandler object
            self.auth = OAuthHandler(consumer_key, consumer_secret)
            # set access token and secret
            self.auth.set_access_token(access_token, access_token_secret)
            # create tweepy API object to fetch tweets
            self.api = tweepy.API(self.auth)
        except:
            print("Error: Authentication Failed")
```

```
    def clean_tweet(self, tweet):
        '''
        Utility function to clean tweet text by removing links, special characters
        using simple regex statements.
        '''
        return ' '.join(re.sub("(@[A-Za-z0-9]+)|([^0-9A-Za-z \t])|(\w+:\/\/\S+)", " ",
tweet).split())

    def get_tweet_sentiment(self, tweet):
        '''
        Utility function to classify sentiment of passed tweet
        using textblob's sentiment method
        '''
        # create TextBlob object of passed tweet text
        analysis = TextBlob(self.clean_tweet(tweet))
        # set sentiment
        if analysis.sentiment.polarity > 0:
            return 'positive'
        elif analysis.sentiment.polarity == 0:
            return 'neutral'
        else:
            return 'negative'

    def get_tweets(self, query, count = 10):
        '''
        Main function to fetch tweets and parse them.
        '''
        # empty list to store parsed tweets
        tweets = []

        try:
            # call twitter api to fetch tweets
            fetched_tweets = self.api.search(q = query, count = count)

            # parsing tweets one by one
            for tweet in fetched_tweets:
                # empty dictionary to store required params of a tweet
                parsed_tweet = {}

                # saving text of tweet
                parsed_tweet['text'] = tweet.text
                # saving sentiment of tweet
                parsed_tweet['sentiment'] = self.get_tweet_sentiment(tweet.text)
```

```
            # appending parsed tweet to tweets list
            if tweet.retweet_count > 0:
                # if tweet has retweets, ensure that it is appended only once
                if parsed_tweet not in tweets:
                    tweets.append(parsed_tweet)
            else:
                tweets.append(parsed_tweet)

        # return parsed tweets
        return tweets

    except tweepy.TweepError as e:
        # print error (if any)
        print("Error : " + str(e))

def main():
    # creating object of TwitterClient Class
    api = TwitterClient()

    try:
        print("Please wait calibrating the microphone, pleasebe silent")
        with mic as source: r.adjust_for_ambient_noise(source,duration=5)
        print("Set min energy threshold value to {}".format(r.energy_threshold))
        print("==========================================================")
        while True:
            with mic as source:
                try:
                        print("Let's check if we are good to go! please speak something!")
                    audio = r.listen(source,timeout = None)
                    print("Wait! I am Analysing...")
                    message = str(r.recognize_google(audio))
                    print("=======================================")
                    print("Got it! you said: -"+message)
                    print("=======================================")
                    print("Please speak the hashtag")
                    audio = r.listen(source,timeout = None)
                    print("Gathering your hashtag...")
                    hashtag = str(r.recognize_google(audio))
                    print("Your hashtag was: "+hashtag)
                    #calling function to get tweets for hashtag
                    tweets = api.get_tweets(query = hashtag,count = 200)
                    print("positive, negative or neutral ?")
                    audio = r.listen(source,timeout = None)
                    print("Wait I am Analysing your choice...")
```

```
            choice = str(r.recognize_google(audio))
            print("====================================")
            print("GOT IT YOU WANT "+choice+" tweet data")
            if choice=='positive':
                tts=gTTS(text="Okay! Showing you the results for positive tweet
percentage",lang='en')
                tts.save("pcvoice.mp3")
                os.system("mpg321 pcvoice.mp3")

                # picking positive tweets from tweets
                ptweets = [tweet for tweet in tweets if tweet['sentiment'] == 'positive']
                # percentage of positive tweets
                print("Positive tweets percentage: {}
%".format(100*len(ptweets)/len(tweets)))
                # printing first 5 positive tweets
                print("\n\nPositive tweets:")
                for tweet in ptweets[:10]:
                    print(tweet['text'])

            elif choice=='negative':
                tts=gTTS(text="Okay! Showing you the results for negative tweet
percentage",lang='en')
                tts.save("pcv3")
                os.system("mpg321 pcvoice.mp3")

                # picking negative tweets from tweets
                ntweets = [tweet for tweet in tweets if tweet['sentiment'] == 'negative']
                # percentage of negative tweets
                print("Negative tweets percentage: {}
%".format(100*len(ntweets)/len(tweets)))
                # printing first 5 negative tweets
                print("\n\nNegative tweets:")
                for tweet in ntweets[:10]:
                    print(tweet['text'])
                    elif choice=='neutral':
                        tts=gTTS(text="Okay! Showing you the results for the neutral tweet
percentage",lang='en')
                        tts.save("pcvoice.mp3")
                        os.system("mpg321 pcvoice.mp3")

                        #picking neutral tweets from tweets

        except sr.UnknownValueError:
            print("Didn't Catch")
```

```
    except KeyboardInterrupt:
        pass
if __name__ == "__main__":
    # calling main function
    main()
```

4. TESTING

4.1 Test Cases, Input and Output

1. Test case 1-

Hash Tag was Donald Trump:

```
pranav@pranav-X556UA:~/Desktop/Seminar Project$ python voice_controlled_twitter.py
ALSA lib pcm.c:2266:(snd_pcm_open_noupdate) Unknown PCM cards.pcm.rear
ALSA lib pcm.c:2266:(snd_pcm_open_noupdate) Unknown PCM cards.pcm.center_lfe
ALSA lib pcm.c:2266:(snd_pcm_open_noupdate) Unknown PCM cards.pcm.side
ALSA lib pcm_route.c:867:(find_matching_chmap) Found no matching channel map
ALSA lib pcm_route.c:867:(find_matching_chmap) Found no matching channel map
ALSA lib pcm_route.c:867:(find_matching_chmap) Found no matching channel map
ALSA lib pcm_route.c:867:(find_matching_chmap) Found no matching channel map
Please wait calibrating the microphone, pleasebe silent
Set min energy threshold value to 627.488144218
======================================================
Let's check if we are good to go! please speak something!
Wait! I am Analysing...
======================================
Got it! you said: -hi
======================================
Please speak the hashtag
Gathering your hashtag...
Your hashtag was: Donald Trump
positive, negative or neutral ?
Wait I am Analysing your choice...
==================================
GOT IT YOU WANT positive tweet data
High Performance MPEG 1.0/2.0/2.5 Audio Player for Layer 1, 2, and 3.
Version 0.3.2-1 (2012/03/25). Written and copyrights by Joe Drew,
```

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Uses code from various people. See 'README' for more!
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Playing MPEG stream from pcvoice.mp3 ...
MPEG 2.0 layer III, 32 kbit/s, 24000 Hz mono

[0:04] Decoding of pcvoice.mp3 finished.
Positive tweets percentage: 32 %

Positive tweets:
RT @PoliticalEmilia: If your primary reason for not wanting teenagers involved in politics is because you don’t want to listen to “immature…
RT @JamilSmith: A film about the Central Park Five, directed by @ava. I wonder who will play the New York City real estate tycoon who publi…
RT @MillenPolitics: Innocent people don’t pressure witnesses.

Innocent people don’t pardon in a “message” to their associates.

Innocent…
i don't kid myself into thinking the president is intimately aware of or overly-familiar with ANY particular policy… https://t.co/8Iryd40Pmg
Church of The Donald - POLITICO
Has Trump read the good book? He certainly has not read the Constitution https://t.co/NblcBmh8Ww
RT @selfstyledsiren: The Ivana Trump Page Six Interview packs as much cattiness into about 1500 words as the 1939 THE WOMEN does into its e…
RT @The_Trump_Train: BREAKING: Former New York City Mayor Rudy Giuliani, who joined President Donald Trump's legal team today, says he hope…
RT @PalmerReport: Donald Trump still hasn’t tweeted anything today. Now we know what it takes to stun him into silence: his wife smiled at…
RT @krassenstein: This is one more time than I've seen Melania smile while talking to Donald Trump.

I want you to see this @realDonaldTru…
RT @mike_Zollo: President Trump has demonstrated incredible patience with Mitt Romney. If Romney doesn’t know if he can support Trump in 20…
Let's check if we are good to go! please speak something!
Wait! I am Analysing...
==========
Got it! you said: -hi
==========

Please speak the hashtag
Gathering your hashtag...
Didn't Catch
Let's check if we are good to go! please speak something!
Wait! I am Analysing...
==========
Got it! you said: -hi
==========
Please speak the hashtag
Gathering your hashtag...
Your hashtag was: Donald Trump
positive, negative or neutral ?
Wait I am Analysing your choice...
Didn't Catch
Let's check if we are good to go! please speak something!
Wait! I am Analysing...
==========
Got it! you said: -hi
==========
Please speak the hashtag
Gathering your hashtag...
Your hashtag was: Donald Trump
positive, negative or neutral ?
Wait I am Analysing your choice...
==========
GOT IT YOU WANT negative tweet data
High Performance MPEG 1.0/2.0/2.5 Audio Player for Layer 1, 2, and 3.
Version 0.3.2-1 (2012/03/25). Written and copyrights by Joe Drew,
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Playing MPEG stream from pcvoice.mp3 ...
MPEG 2.0 layer III, 32 kbit/s, 24000 Hz mono

[0:04] Decoding of pcvoice.mp3 finished.
Negative tweets percentage: 22 %

Negative tweets:
RT @buterakaty: Kanye West: *is a Donald Trump supporter*
Black Twitter: *silence*
Taylor Swift: *covers a song*

Black Twitter: https://t.c…
RT @DenbrotS: Donald Trump's Child Rape Accuser Canceled Her Press Conference Due to Death Threats
Who arranged the death threats?
Will Mic…
RT @__Kitty_Purry_: Katy Perry - *collabs with migos*
BLACK TWITTER - OPRESSION FT. MIGOS HOMOPHOBIC RACIST

Taylor Swift - *covers a song…
RT @adamcbest: Mitt Romney will decide on supporting Donald Trump in 2020 “down the road,” adding that’s he’s not “a cheap date.” Wrong. He…
RT @BoycottUtah: It is Sunday, April 22, 2018. One citizen, I humbly call for the resignation of Donald J Trump as President of the United…
@cindyleedaniel NWO...IDIOTS..sold out USA..years ago...!..🇺🇸🇺🇸🇺🇸
God bless Donald Trump!!
RT @nancylee2016: "Trump is the one person who finally called out the “fake news channels”

TRUTH: Comey and other higher-up in our FBI/DOJ…
RT @PhilipRucker: Ivana Trump, in media interview, says Don Jr won’t have trouble finding a new spouse but Vanessa will: “Who is going to d…
Macron Takes a Risk in Courting Trump, but Has Little to Show for It - New York Times https://t.co/bVirUQKkbf
RT @MaxBoot: Kim isn’t give up nukes! Confirms what I just wrote: “He’s stringing Trump along, making vague promises that he has no intenti…
Let's check if we are good to go! please speak something!
^Z
[1]+ Stopped   python voice_controlled_twitter.py
pranav@pranav-X556UA:~/Desktop/Seminar Project$

2. Test case 2-

Hash Tag was Syria:

pranav@pranav-X556UA:~/Desktop/Seminar Project$ python voice_controlled_twitter.py
ALSA lib pcm.c:2266:(snd_pcm_open_noupdate) Unknown PCM cards.pcm.rear
ALSA lib pcm.c:2266:(snd_pcm_open_noupdate) Unknown PCM cards.pcm.center_lfe
ALSA lib pcm.c:2266:(snd_pcm_open_noupdate) Unknown PCM cards.pcm.side
ALSA lib pcm_route.c:867:(find_matching_chmap) Found no matching channel map
ALSA lib pcm_route.c:867:(find_matching_chmap) Found no matching channel map
ALSA lib pcm_route.c:867:(find_matching_chmap) Found no matching channel map
ALSA lib pcm_route.c:867:(find_matching_chmap) Found no matching channel map
Please wait calibrating the microphone, pleasebe silent
Set min energy threshold value to 584.548191943

==========
Let's check if we are good to go! please speak something!
Wait! I am Analysing...
==========
Got it! you said: -hi
==========
Please speak the hashtag
Gathering your hashtag...
Your hashtag was: Syria
positive, negative or neutral ?
Wait I am Analysing your choice...
==========
GOT IT YOU WANT positive tweet data
High Performance MPEG 1.0/2.0/2.5 Audio Player for Layer 1, 2, and 3.
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Playing MPEG stream from pcvoice.mp3 ...
MPEG 2.0 layer III, 32 kbit/s, 24000 Hz mono

[0:04] Decoding of pcvoice.mp3 finished.
Positive tweets percentage: 36 %

Positive tweets:
@g7 Without Russia, no effective meeting will take place. World knows that Russia is the most important country,… https://t.co/aL6kb8x8gP
Air strikes pound insurgent enclave close to Damascus https://t.co/22ivY4ZIg1

Next time your leader offers you mea… https://t.co/c2cXslqajj
It's exactly what happened when Trump bombed Syria in 2017. It was all cleared with the Russians ahead of time, all… https://t.co/2xz6xByQjC
US, France & allies should not leave, must build ‘new #Syria after war’ – #Macron https://t.co/Rt9ZpWhpaZ https://t.co/306jxbDt85
@whytebarry @sundaybusiness @ballsdotie I don't accept your contention about free information being either being st… https://t.co/wGeiYZy5g8
RT @bourgeoisalien: Before you believe what our media is saying about Syria, consider Robert Fisk's account, who is an award winning journa…
RT @RonPaul: Former UK Ambassador Reveals Truth About Syria - With Special Guest Peter Ford. Don't miss today's Liberty Report:
https://t.c…

RT @DovePresents: REAL Syrian Civil Defense wear RED HELMETS--are too humble/BUSY to FILM THEMSELVES doing their work. #AlNusra #AlQaeda #W…
RT @TRTWorldNow: French President Macron says the United States, France and other allies will have a “very important” role to play in rebui…
US, France & allies should not leave, must build ‘new Syria after war’ – Macron https://t.co/5M8sTHILtm
Let's check if we are good to go! please speak something!
Wait! I am Analysing...
==========
Got it! you said: -hi
==========
Please speak the hashtag
Gathering your hashtag...
Your hashtag was: Syria
positive, negative or neutral ?
Wait I am Analysing your choice...
==========
GOT IT YOU WANT negative tweet data
High Performance MPEG 1.0/2.0/2.5 Audio Player for Layer 1, 2, and 3.
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Playing MPEG stream from pcvoice.mp3 ...
MPEG 2.0 layer III, 32 kbit/s, 24000 Hz mono

[0:04] Decoding of pcvoice.mp3 finished.
Negative tweets percentage: 21 %

Negative tweets:
How do you get aid into the world's worst war zones?

https://t.co/ieSvhczCBe
ABC News: Iraq says its strikes in Syria killed 36 IS militants
Carla Ortiz Shocking Video From Syria Contradicts Corp. News Coverage https://t.co/IVDfNwEsPF via @YouTube
RT @MrKyruer: #Syria #Turkey #OperationOliveBranch
Harakat al-Qiyam militants killed 1 #YPG-#SDF members in #Qamishli https://t.co/dKPRsD7O…
#forex #bitcoin #gold #oil #technical #money #profits #Lebanon #Dubai #Saudi_Arabia #crude_oil #technical_analysis… https://t.co/ioRRliPl0e

@realDonaldTrump Commander Syria Russian and Iran- watch to many
American mission impossible movies look for the s… https://t.co/fiPmxOPFGd
RT @axios: Macron to Trump: "It's too complicated if you make war against everybody ... Come on ... You need allies." https://t.co/ZVfpkbhw…
"Kucinich has been an outspoken defender of the Assad regime in Syria even as it killed countless people and has re… https://t.co/nzuYkYHZp3
RT @Partisangirl: For all my new followers, this is the story of #Syria. The one you've never heard. You are going to be shocked. https://…
RT @ModerateInfo: What an insane week! #Podcast #Syria #Zuckerberg #FreakParty

https://t.co/cjXevOkZaW

https://t.co/pdxx316S9g

https://…
Let's check if we are good to go! please speak something!
^Z
[1]+ Stopped   python voice_controlled_twitter.py
pranav@pranav-X556UA:~/Desktop/Seminar Project$ ^C
pranav@pranav-X556UA:~/Desktop/Seminar Project$

3. Test case 3-

Hash Tag was Narendra Modi:

pranav@pranav-X556UA:~/Desktop/Seminar Project$
pranav@pranav-X556UA:~/Desktop/Seminar Project$ python voice_controlled_twitter.py
ALSA lib pcm_dsnoop.c:606:(snd_pcm_dsnoop_open) unable to open slave
ALSA lib pcm.c:2266:(snd_pcm_open_noupdate) Unknown PCM cards.pcm.rear
ALSA lib pcm.c:2266:(snd_pcm_open_noupdate) Unknown PCM cards.pcm.center_lfe
ALSA lib pcm.c:2266:(snd_pcm_open_noupdate) Unknown PCM cards.pcm.side
ALSA lib pcm_route.c:867:(find_matching_chmap) Found no matching channel map
ALSA lib pcm_route.c:867:(find_matching_chmap) Found no matching channel map
ALSA lib pcm_route.c:867:(find_matching_chmap) Found no matching channel map
Please wait calibrating the microphone, pleasebe silent
Set min energy threshold value to 575.529074083
==========
Let's check if we are good to go! please speak something!
Wait! I am Analysing...
==========
Got it! you said: -hi
==========
Please speak the hashtag
Gathering your hashtag...

Your hashtag was: Narendra Modi
positive, negative or neutral ?
Wait I am Analysing your choice...
==========
GOT IT YOU WANT positive tweet data
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Playing MPEG stream from pcvoice.mp3 ...
MPEG 2.0 layer III, 32 kbit/s, 24000 Hz mono

[0:04] Decoding of pcvoice.mp3 finished.
Positive tweets percentage: 17 %

Positive tweets:
RT @BJP4India: PM Modi gives an exemplary example on how to contribute to ensuring good healthcare for people during his video interaction…
RT @narendramodi: Excellent interaction with @BJP4India MPs and MLAs. We discussed a wide range of issues. A few MPs and MLAs asked questio…
RT @bsindia: Modi goes Rajiv way to fix bilateral issues with Xi, China: Top 10 updates #NarendraModi #XiJinping #IndiaChinabilateralties #…
RT @drramansingh: Today, during my visit to Pitambar peeth in Datia , watched a video on the @NamoApp. Narendra Modi app is a wonderful way…
RT @ANI: #WATCH "It's certainly a very bold step," says Former Foreign Secretary Subrahmanyam Jaishankar on upcoming informal meeting betwe…
RT @dasraghubar: PM Narendra Modi congratulates jharkhand BJP on municipal elections win.: https://t.co/XscMy7wdHf via @YouTube
RT @hinducounciluk: #india #hindu @narendramodi @PMOIndia @yogrishiramdev @Ach_Balkrishna “PM NARENDRA MODI LIVE IN CONVERSATION” ~ “Bharat…
Let's check if we are good to go! please speak something!
Wait! I am Analysing...
==========
Got it! you said: -hi
==========
Please speak the hashtag
Gathering your hashtag...
Your hashtag was: Narendra Modi
positive, negative or neutral ?
Wait I am Analysing your choice...

Didn't Catch
Let's check if we are good to go! please speak something!
Wait! I am Analysing...
==========
Got it! you said: -hi
==========
Please speak the hashtag
Gathering your hashtag...
Your hashtag was: Narendra Modi
positive, negative or neutral ?
Wait I am Analysing your choice...
==========
GOT IT YOU WANT negative tweet data
High Performance MPEG 1.0/2.0/2.5 Audio Player for Layer 1, 2, and 3.
Version 0.3.2-1 (2012/03/25). Written and copyrights by Joe Drew,
now maintained by Nanakos Chrysostomos and others.
Uses code from various people. See 'README' for more!
THIS SOFTWARE COMES WITH ABSOLUTELY NO WARRANTY! USE AT YOUR OWN RISK!

Playing MPEG stream from pcvoice.mp3 ...
MPEG 2.0 layer III, 32 kbit/s, 24000 Hz mono

[0:04] Decoding of pcvoice.mp3 finished.
Negative tweets percentage: 5 %

Negative tweets:
RT @ggiittiikkaa: Afsana Begum, Tabassum and Ali from this small village in Bihar say - everyone used to scare us about Modi, but he gave 3…
RT @sanjukta: "I support Narendra Modi" is a Facebook page run by a man called Vikas Pandey has 15 million reach. They posted fake news on…
Let's check if we are good to go! please speak something!
^Z
[4]+ Stopped   python voice_controlled_twitter.py
pranav@pranav-X556UA:~/Desktop/Seminar Project$

5. APPLICATIONS

Sentiment Analysis for tweets can be applicable to sort out the percentage of people favouring and against a particular issue. It can be applied to gather the bent of people towards a political leader, service or anything for that matter. Social Networking is an escalating domain and generates tons of data which can be worked upon to find out the opinion of the masses without even asking them their opinion.

Cambridge Analytica, a Analytical firm in the United Stes, used opinion mining on facebook data to generate the estimate of people supporting which presidential candidate and for what reasons. This kind of accurate predictions can be done using Sentiment Analysis for the Twitter domain.

Sentiment analysis has many applications and benefits to a business and organization. It can be used to give the business valuable insights into how people feel about their product brand or service.

It can be used to identify when potential negative threads are emerging online regarding the business, thereby allowing us to be proactive in dealing with it more quickly.

6. SHORTCOMINGS

However, the program generates accurate results for normal tones of sentence. We observed that it does not work for sarcastic tweets. The program uses Naïve Bayes Classification in order to classify the tweets into positive, negative and neutral Tweets. This method of classification gets a bit difficult to classify sarcasm as it is a mixture of both positive and negative polarity sentences, which makes the concepts of inverse probability unacceptable to work on. Hence, giving the straightforward understanding and thus missing sarcasm.

Many powerful NLP algorithms have been fed sarcastic sentences, based on which the program might understand sarcasm, but still the work is going on in that specific direction.

However, Naïve Bayes Classification fails to do so.

7. CONCLUSION

The program for Twitter sentiment analysis using Python generates accurate results for non-sarcastic tweets which mention the specified hashtag. However, the program fails to take into consideration sarcasm and the accuracy drops down heavily.

The Google Text To Speech feature and the Voice Recognition UI works perfectly fine for less noisy environments and the processing lag is just 2 sec.

Whereas for more noisy environment, when the threshold is above 10,000hz the processing lag is around 6-7 sec.

8. REFERENCES

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