Chatbot and bullyfree Chat

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***Abstract*— In this technology world, a recent technology called chatbot which have been in demand and usage for every business purpose and have hit the market.Chatbots is an interaction between person and bot which gives us a efficient service and it also gives the way to develop customer engagement and efficiency by reduction of cost by using these service .Chatbots can be accessible at anytime ,which can handle capacity that is chatbot can chat with thousands of people at a time ,It has a flexible attribute as well as customer satisfaction.A chatbot is constructed using natural language processing with the help of machine learning algorithm for training the bot and to make up the bot to perform in a right way and so training and testing is done using ML.This paper gives an overview of chatbot and challenges we faced behind the chatbot with extra features of images.**

Keywords - Chatbot, NLP, Machine Learning (ML), Artificial Intelligence (AI).

I . INTRODUCTION

Chatbots are used as messaging service provider which provides instant messaging framework .Its goal is to provide conversational service to the people who interact with bots normally called as user in an efficient way.The fastest way and minimal confusing web application and mobile application which is easy for installation without any need of installation packages.These packages are easy to manage and distribute [1]. Chatbots differ from other chatting application as they do not contain any online status and or last seen and call with other user .Figure.1explains about the types of chatbot available to be used in web applications. In Figure 1 Open domain chatbot is used to retrieve the all general information like general knowledge ,weather forecast etc. For example alexa bot, cortana bot form windows siri bot form apple or google assistant .

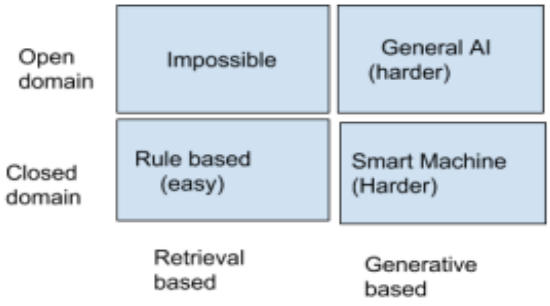

Figure.1 Chatbots types

Closed Domain chatbot concentrated only on the specific domain which is used to answer to the question on the related domain. [2]Genreative based chatbot is commonly rule based chatbot depending upon the input the output is given since it is already databased .Retrieval model chatbot parses the input by grammatical format and produces the output. Chatbot mainly depends on ml ,nlp and logics.

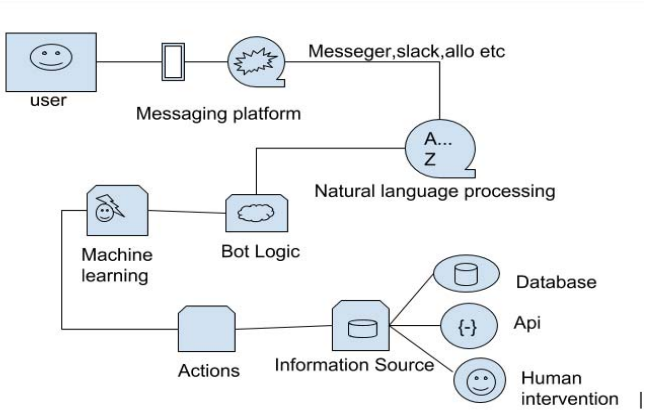

Figure. 2 Chatbot Architecture.

In Figure 2 overall process behind the chatbot is shown ,In this natural language processing plays a major role in chatbot creation .Natural language processing used to play with texts or with better understanding lets say words. [3] NLP is ability for the computer to understand our human language for this nlp is used and also for sentiment analysis we can judge the performance as we have seen in facebook . The next big thing that we deal with while using chatbot is machine learning algorithms used behind it.[4] Machine Learning is the one which we learn from experience instead of coding we train the bot and test the accuracy whether it works to whatever we have trained or not. There are many machine learning algorithm depending upon the input they are classified as supervised and unsupervised but in our project we use supervised algorithm.

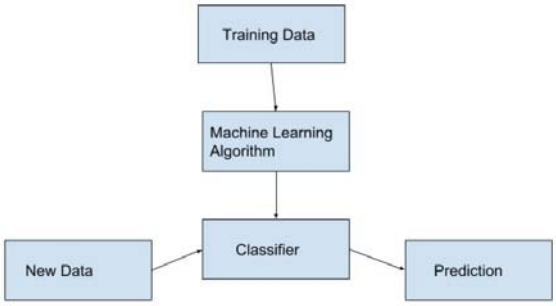

Figure.3 Supervised Machine Learning

In Figure.3 our project uses supervised machine learning algorithm in that its classified into linear regression and classification .using our dataset we parsed the sentence using natural language processing which includes syntactical checking ,stemming function, vectorization concepts are used for parsing the sentence and after this machine learning algorithms are used to check for whether the bot works correctly or not.

II CYBERBULLYING CONCEPT

[5]The concept behind cyberbullying is used to detect the bully words as there are three kinds of information including text ,user demography and social networks feautures are used in cyberbullying detection.here in our project we mainly focus on text based cyberbully detection .Stacked denoising autoencoder concept is used behind cyberbullying ,in this SDAstacks and concatenate several auto-encoders that is trained to recover the data from a corruption.[6]Automatic extraction of bullying words is based on word embeddings which is used to finds the correlation between normal words and bully words.[7]By constructing a bullyspace and natural language processing methods performance can be boosted.

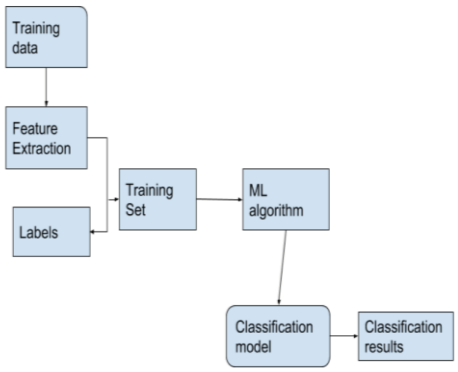

Figure.4 Cyberbullying Architecture

Cyberbullying between two way chat as we have seen in many social media the detection of bully word are done using bag of words concepts.we have separate dataset of bully words in that we first get the input from the user and then parse it according to nlp methods and then check whether it is a bully word or not and there its detection can be done using cloud server.

III.CHATBOT USING ML IN PYTHON

i)Natural Language Processing

```
def text_process(mess):
    nopunc =[char for char in mess if
char not in string.punctuation]
    print(nopunc)
    nopunc=''.join(nopunc)
    return [word for word in
nopunc.split() if word.lower() not in
stopwords.words('english')]
```

ii)machine learning algorithm

```
rf=RandomForestClassifier(n_estimators=10
0,max_depth=3)
rf.fit(x_train,y_train)
pre=mnb.predict(x_test)
acc=metrics.accuracy_score(y_test,pre)
 print("Score:",acc)
```

These are used for parsing .

ii)*Chatbot creation with python*

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```
if "good" in feeling:
    print("I'm feeling good too!")
elif "fine" in feeling:
    print("I'm feeling good too!")
else:
    print("I'm sorry to hear that!")
    time.sleep(2)
ellig=input("What information do you want
from us?")
if "eligibility criteria" in ellig:
    print("centac 60% and management 40%
above")
elif "entitled college" in ellig:
    print("centac 60% and management 40%
above")
elif " qualified criteria" in ellig:
    print("centac 60% and management 40%
above")
elif "canteen facility" in ellig:
    print("Our college has an excellent
canteen with variety food items and
snacks with excellent quality and hygiene
College has spacious canteen facility in
the college premises and is run by
college management. A variety of south
indian food and snack items are provided
to the students and the staff of the
college at highly subsidized rates with
highest quality.Canteen has a big kitchen
with
steam cooking facility and kitchen staff
take extra care to provide the students
and staff with nutricious and hygenic food
in the campus canteen. Food items are
prepared with RO treated water.It also
provides light refreshment like packed
snack items, cakes, veg. puff, beverages
etc to the students and staff of the
college. Canteen is open from 8:00 AM to
6:30 PM on all working days.")
time.sleep(2)
```

iii)Cyberbully detection

```
Sub Client_Bulling()
        Try
            Dim ShellCommands As String =
""" & PythonPath & """ & " " & """ &
ClientScript & """ & " -a " & """ &
LastText & """
            ShellCommands =
ShellCommands.Replace("\", "/")
            Shell(ShellCommands,
AppWinStyle.Hide, True)

        Catch ex As Exception
            MsgBox(ex.Message.ToString)
        End Try

        Threading.Thread.Sleep(300)

        ''   richTextBox1.Invoke( new
Action( ( ) => richTextBox1.Text = text )
)

        RichTextBox3.Text =
IO.File.ReadAllText(LogPath)

    End Sub

    Private Sub BullingServer_Click(ByVal
sender As System.Object, ByVal e As
System.EventArgs) Handles
BullingServer.Click

        IO.File.WriteAllText(LogPath, "")

        Try
            Dim ShellCommands As String =
""" & PythonPath & """ & " " & """ &
ServerScript & """
            ShellCommands =
ShellCommands.Replace("\", "/")
            Shell(ShellCommands,
AppWinStyle.NormalFocus, False)
        Catch ex As Exception
            MsgBox(ex.Message.ToString)
        End Try

        MsgBox("Bulling Server Started
Sucessfully!")

        RichTextBox3.Text =
IO.File.ReadAllText(LogPath)
        Timer1.Start()
    End Sub
Private Sub Form1_Load(ByVal sender As
System.Object, ByVal e As
System.EventArgs) Handles MyBase.Load

System.Windows.Forms.Control.CheckForIlleg
alCrossThreadCalls = False
        BullingServer.Location = New
Point(BullingServer.Location.X,
SplitContainer1.Panel1.Height / 2 -
BullingServer.Height / 2)
    End Sub

Private Sub BackgroundWorker1_DoWork(ByVal
sender As Object, ByVal e As
System.ComponentModel.DoWorkEventArgs)
Handles BackgroundWorker1.DoWork
        Call Client_Bulling()
    End Sub
```


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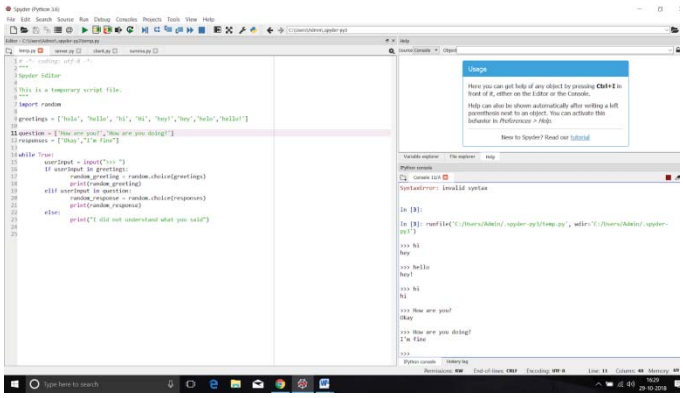
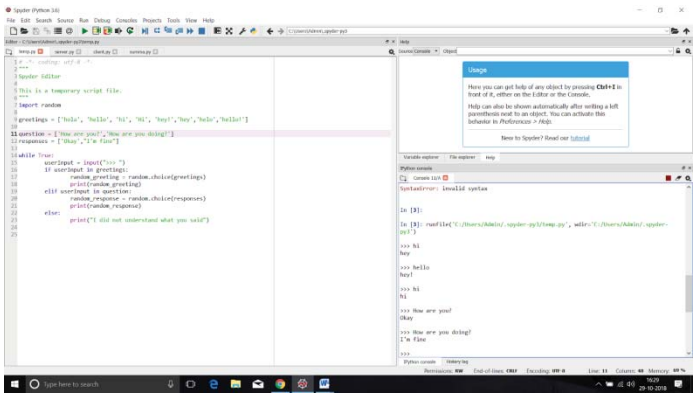
```
Private Sub Timer1_Tick(ByVal sender As
System.Object, ByVal e As
System.EventArgs) Handles Timer1.Tick
        RichTextBox3.Text =
IO.File.ReadAllText(LogPath)

    End Sub
End Class

Dim PythonPath As String =
"C:\ProgramData\Anaconda3\python.exe"
    Dim ServerScript As String =
Application.StartupPath &
"\Python\classifier_Server.py"
    Dim ClientScript As String =
Application.StartupPath &
"\Python\Client_Chats.py"
    Dim LogPath As String =
Application.StartupPath &
"\Python\Server_Log.txt"
    Dim LastText As String = ""
```

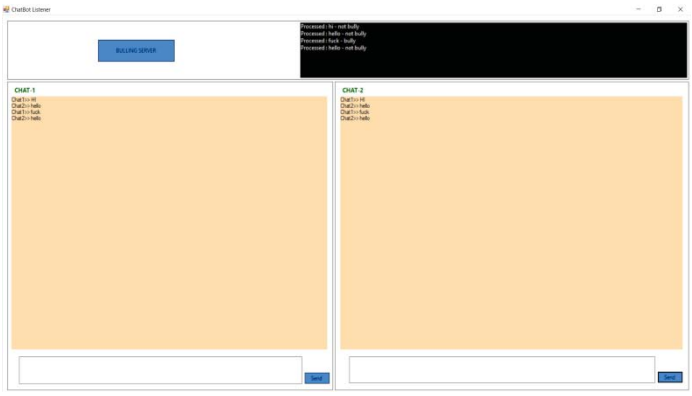
These are used for cyber bully detection.



System specification include python and anaconda ,this is the sample code for chatbot creation which is based on rule based system .But we created based on parsing method nlp .First when the user enter the input that is when the user ask the questions ,the bot will parse break the sentence into words and then star checking whether any bully words present in it or not and then start answering for the given questions.If there is any detection of bully words the bot will mention it as a bully word ,we used this because since it is educational website.



Using time stamp automatic question will be raised after certain time time interval .If the user did not answer for the questions then after sometime it will ask the same question until we respond for it or it can be trained in another way as user needed.



Cyberbully detection when two person chat with each other ,this is detected and its used to display whether its bully word or not .There is an another way which can be mentioned using symbols

IV EXISTING WORK

The main contribution of our work is the development of chatbot using Fuzzy logic , natural processing algorithm like pattern parsing ,sentiment analsis etc., Some of the technologies like machine learning and its algorithm are used in chatbot for parsing the sentence. The algorithms of machine learning like bayesian network ,neural network ,recurrent neural network are used in this chatbot. With the help of bag of words(BOW),the detection of cyberbullying can be done easily. The advantage behind this chatbot is user friendly and can get related information according to the user querries as well as avoidance of bully words .The drawbacks faced while doing our project is that AdaBoost M1 algorithm is used, which use the base classifier Decision Stump(AdaBoost_DS) but the simulation result shows that the proposed algorithm outperforms the existing sensing technique.

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V CONCLUSION AND FUTURE WORK

We have developed the chabot as well as trained the chatbot in such a way ,the concept of cyberbullying in two way chat are constructed using ML algorithms and so we would like to such techniques in chatbot enabled websites .And our proposed algorithm shows better performance than existing so we decided to use in future word and detect cyberbully in chatbot using cyberbully algorithm.

VI REFERENCES

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