Chabot Application Using Artificial Intelligence and NN for Counseling Purpose

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1.Abstract

There are multiple applications of the Chabot this application is specifically made for counselling purpose where it analyses your emotions and personality and depicts the result based on Neural network designed for the emotions analysis. It's just not your words but sometimes your face express more what you wanted to say hence I have implemented face analysis as well which translates facial emotions as well.

In this project, you will be interacting with Chabot which will guide you through different emotional phases as like counselor it will interact with user based on problems.

This app is developed on web platform Django with help of the Heroku it is deployed.

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2.Background:

For this project, there are multiple background project surveys are conducted. This includes student analysis based on different situations and how they react. There are inputs which are taken from the user/ students for Neural Network all the sentences which classify the mood into different based on keywords. These keywords are taken from the counseling books.

There are basically three analysis are conducted on the students for the user language analysis and mood analysis.
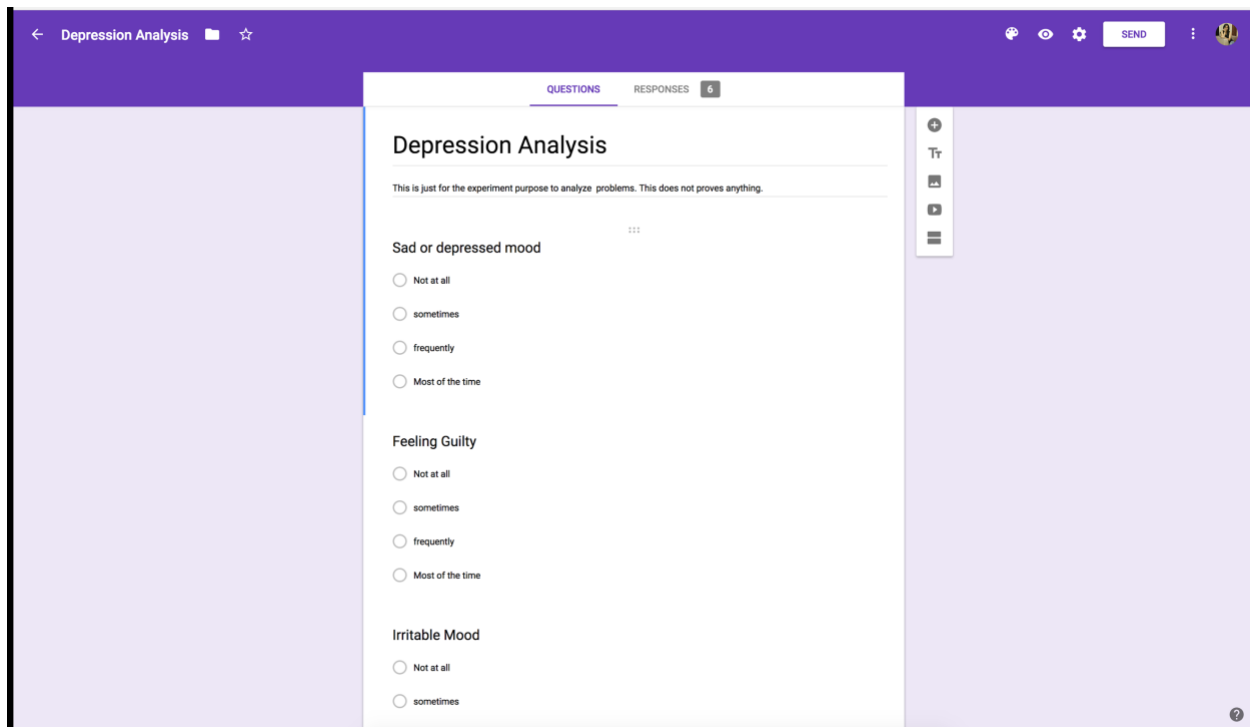
Students are asked to input their current mood what they feel about themselves and then describe their emotions with sentences as they can explain.

These forms are designed under counseling professional. This survey plays important role since it is giving real time input to our Chabot.

As this is just an attempt to design prototype for the Chabot.

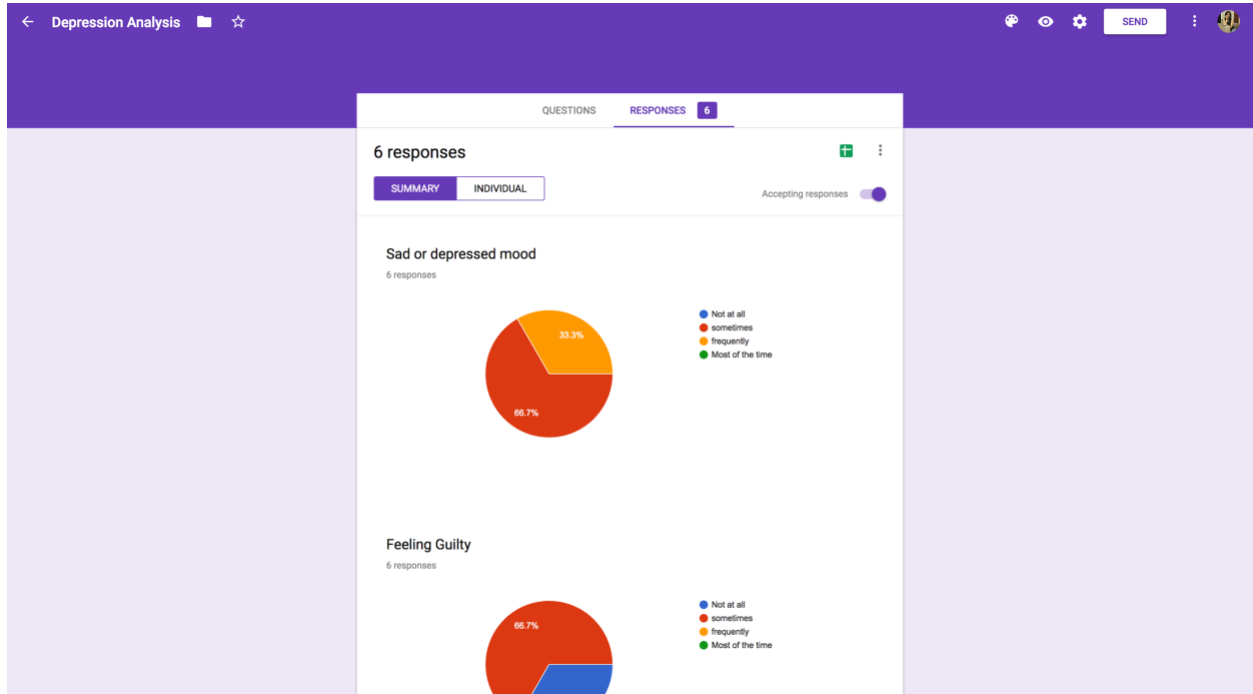https://docs.google.com/forms/d/1KdvFlNcEs3INyABgxWZwbqSrlLyR8HGmP-_FO0980vk/edit

Depression Analysis

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QUESTIONS   RESPONSES   5

Project Survey

This form is strictly Designed for the Project experiment purpose the anonymity will be maintained. Just answer what comes first in your mind.
Thank you for taking out time and taking this survey.

What is you gender?   Multiple choice ▾

○ Female   ✕

○ Male   ✕

○ Other   ✕

○ Add option or ADD "OTHER"

Required ⬤ ⋮

What is your age group? *

○ 21-25

○ 25-30

How long have you been in States? *
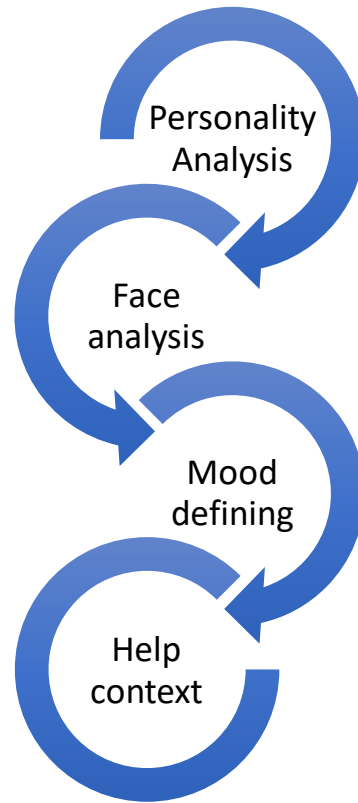
○ less than year

○ More than year

3.Modules:

1. ## Personality Analysis:
   This module contains input from the forms from the user this neural network is designed. Classifier is "naïve" because it takes into consideration the differences and independence of the emotions there are certain emotions which goes nearby each other like sad, depression. All the words are considered from the blend of the user surveys and counseling words.

   Tokenization:
   Whatever is the user input given to the first statically it tokenizes every sentence into small parts. Which later helps the model to form a bag.

   Stemming:

Stemming always helps us to form the different words from the current set of words there are different stemmer which can be used for this project we have used Lancaster stemmer.

Switching intent is another important thing which involves many types of mood
These are considered into dictionary

To define these, we have used list and dictionaries. Each Dictionary has attributes" Class" and "sentence". As this is just a protocol designed in developing actual personality model probably there should be more than current data.

The NLP plays vital role as it collect stemmed words. We have our data into dictionaries. Initially all words are treated with equal weight
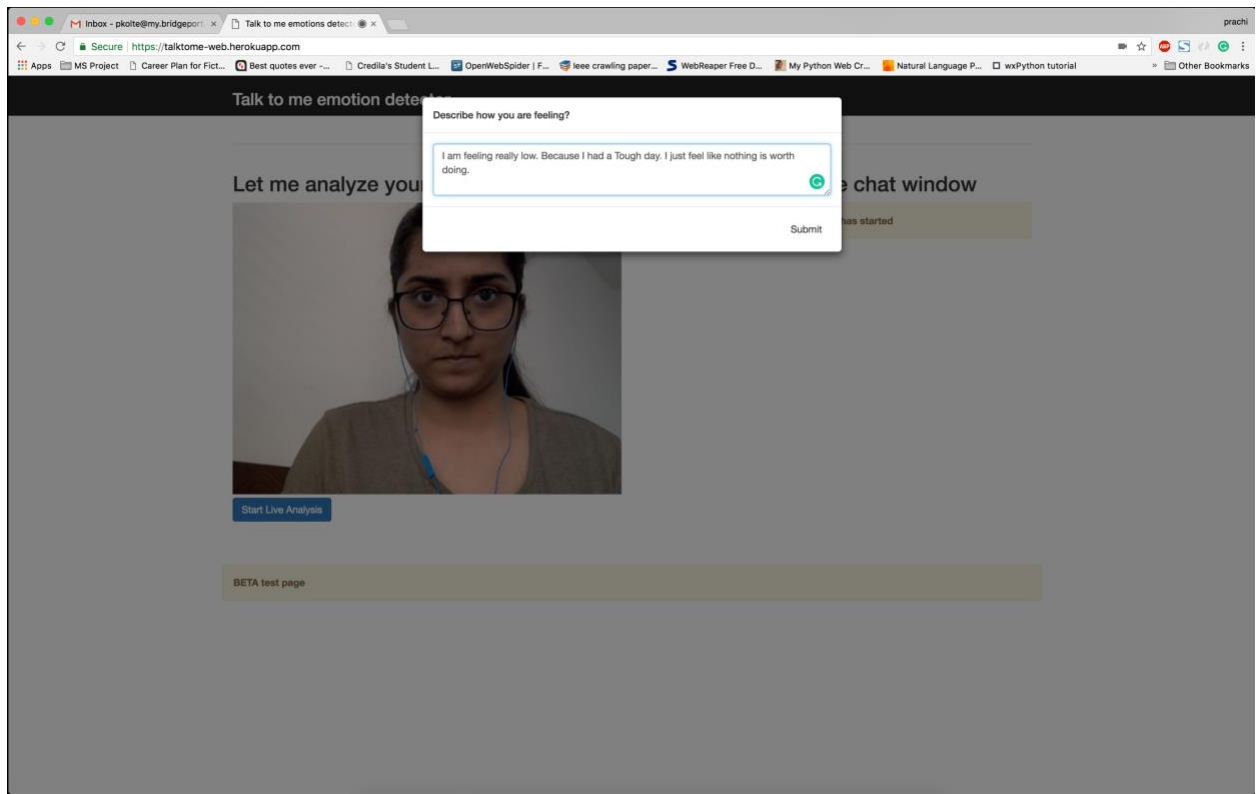
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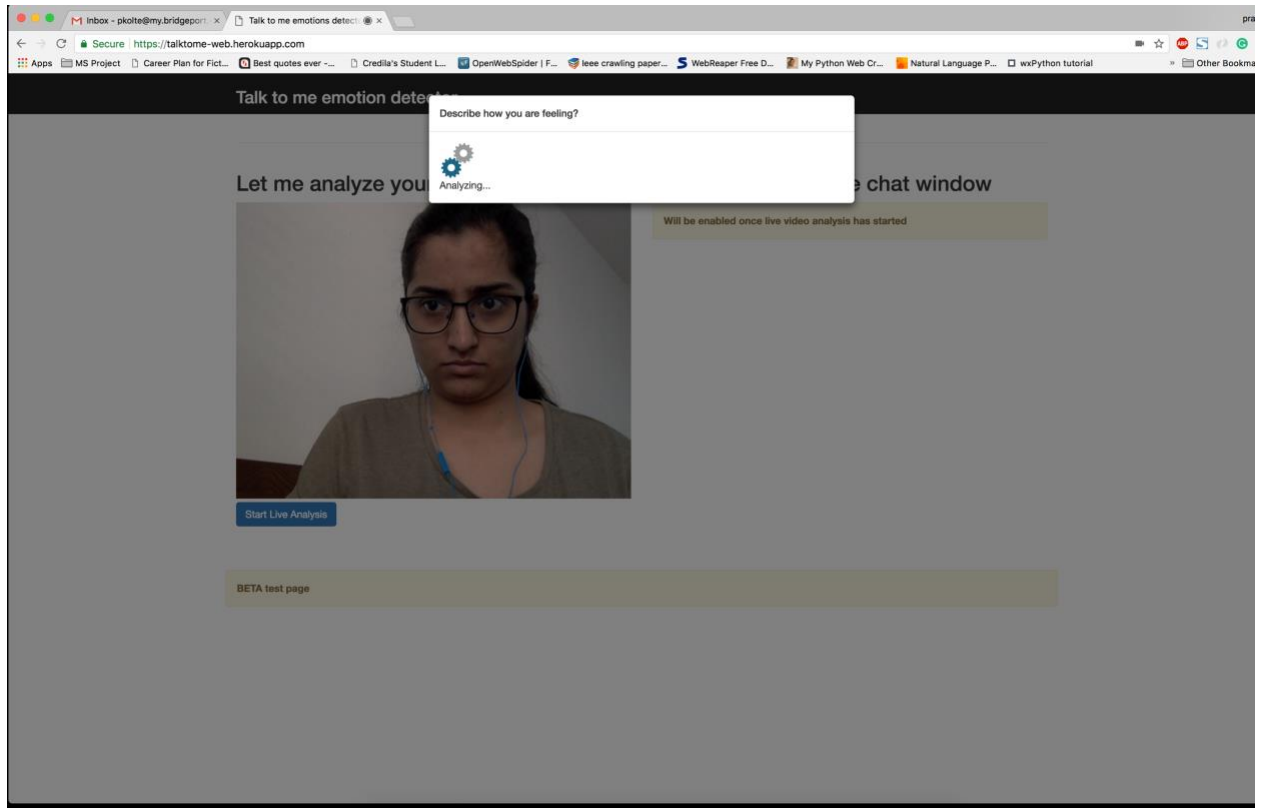
<u>Neural Network:</u>

The parameters used for the Neural Network are

```
def train(X, y, hidden_neurons=20, alpha=0.2, epochs=600000, dropout=False,
```

We use 20 neurons in our hidden layer, you can adjust this easily. These parameters will vary depending on the dimensions and shape of your training data, tune them down to ~10^-3 as a reasonable error rate.

This **classify()** function is all that's needed for the classification once synapse weights have been calculated: ~15 lines of code.

The catch: if there's a change to the training data our model will need to be re-calculated. For a very large dataset this could take a non-insignificant amount of time.

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We can now generate the probability of a sentence belonging to one (or more) of our classes. This is super fast because it's dot-product calculation in our previously defined **think()** function.

2. Face Analysis

   Since not every time a person can analyze all the emotions efficiently from the talk hence I have implemented face analysis as well to check the emotions. Based on position of the eyebrows, chicks and eyes this API is implemented.
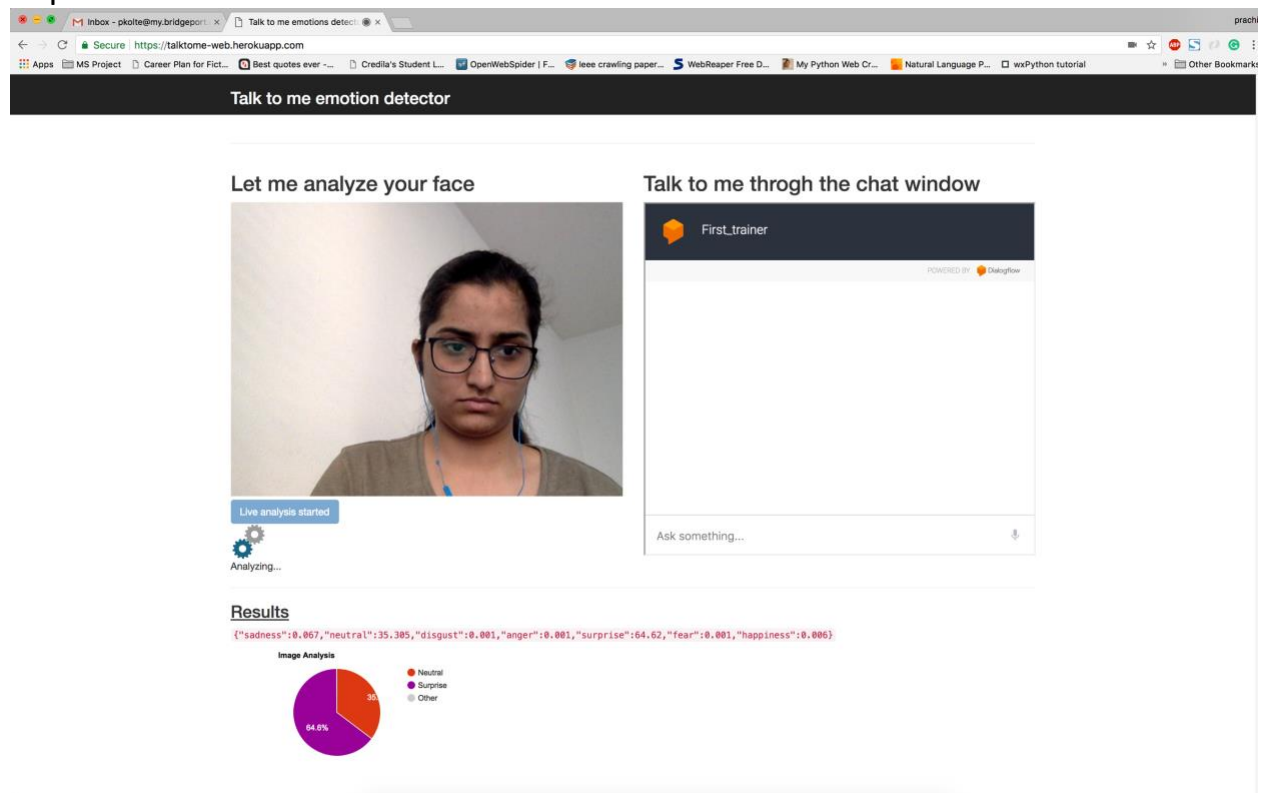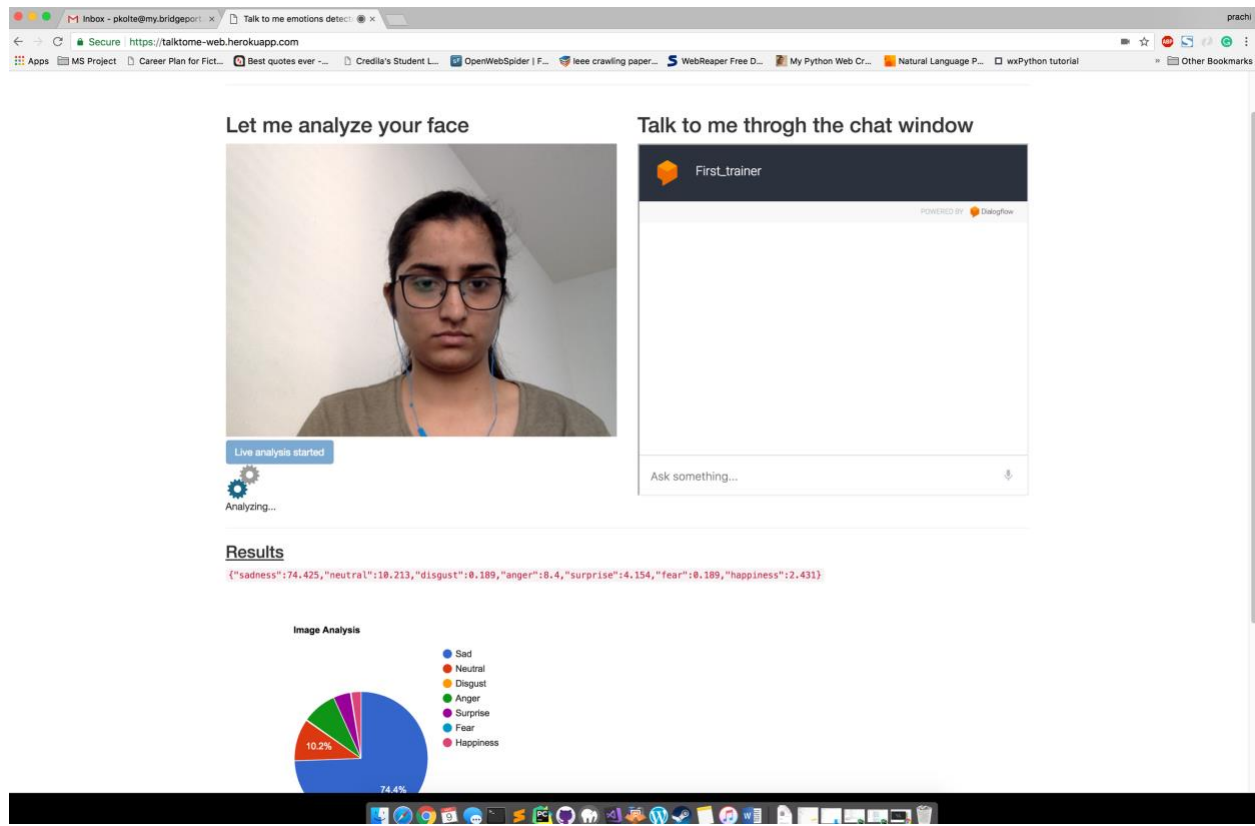
3. <u>Mood Defining:</u>

For every talk there are certain keywords designed which switch the intents from one another based on dialogue for this purpose Dialogue flow is used where we can define agents, entities and attributes to flow the data. Interact based on responses user are giving.

User Can keep on inputting values in order to make conversation and one trigger word will end the conversation.

Talk to me throgh the chat window

First_trainer

POWERED BY Dialogflow

I am losing control

It's okay you are alright. Take a deep breath . would you like to talk more about that?

yes

I think its always good to share with you friends.

Ask something...

4.Future Scope:

1. There are so many things which are still on small scale for this project for example data is not sufficient and available to develop the entire Chabot to experience the effectiveness of the counseling Chabot.
2. Personality model can be increased mood wise
3. Interaction can be performed more into automation.
4. This program can be deployed on the real-time robot.

5.Conclusions:

Chabot is new era for the interaction and developing Chabot with data mining, artificial intelligence along with Neural Network gives new boost for working. As this Chabot was focused on counseling purpose the NN can help a lot when it comes to analyze personality.

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