

# The concept of machine learning english language essay

[Linguistics](#), [English](#)



To collect the data we can also take the help of any software tool. These tools are basically helpful in collecting the data. These tools are generally open source software. These tools are freely available on internet. Some of them are like wavesurfer, praat etc. The thing very important in case of collecting data is that data should be homogeneous. Our collecting data may have of different types such as . wave, . avi, . mp3, . mp4 etc. The first stage decides how much perfect our system will run. The model is trained only for that data.

## 4. 2 Overview

Hence the result part shows the concept of machine learning. This approach is a basic fundamental towards machine become emotional. The emotions are very specific features for anyone. Maximum things are there that can be control by emotions. This is the main aspect of this approach. Japan is leading country in this field. The engineers from Honda Company are created a robot name ASIMO with 34 Degree of freedom. This degree helps this into walk and performs like a human. It has body structure and features as following [28]. Height 130cmWeight 54 KgWalking speed 2. 7 Km/hrRunning speed 6Km/hrGrasping force 0. 5 Kg/handSensors (Foot)6 Axis Foot Area SensorsPowerRechargeable 51. 8 V Lithium Ion BatteryOperating Time1 hrThis has a wide scope in future. The achievement of the today's working of robots. This all depends on today's progress in this field. Science gives the new concept and engineering is the platform that implements these concepts. Science is the only conceptual object just on the piece of paper. But the engineering is the field that has the ability to implement these concepts. Engineering is the domain that builds something that never

happened before. Not only implementations of the concept but also relate to the real life. In real life we don't have so much energy to make this system. These systems are made once and work for a long times. In the present approach we discussed about the learning of a machine from emotions. A machine can learn from emotions. But the major thing is that how a machine can learn from emotions. What are assumption and way by which emotion can generate in machine? Robot or any machine that has some power system. This power can be manage by power management system. This system has some policies and some strategies how to save more power. The emotions are very sensitive and specific for anyone. These are valuable facts. These are not general tasks. A human and machine both can have some creative ideas. How to implement these ideas into the beneficial for human life. There should be no hesitation should be for machine.

### **4.3 Collection of sampling data**

The first step for this model is the collection of the data. This data has several specific features. The general formats are given above. In our case our model is trained on the waveform on mono waveform. This step is partially describes in the above for the working of wavesurfer in section 3. 5. 2. We generally take the sample of length for 0. 20 ms to 01 or 02 seconds. We are able to remove the gap between two and more clip sample for the emotions. Generally we avoid the gape or silence speech of the sample. The sound wave should be in mono wave form. So in this step we take a long clip (02-05 ms) for clipping. Then by the help of software tool we open this file in file browser. After open we see the pictorial waveform for the sound. As per

need after listening the sound, we cut the required amount of the clip. Then check the format for the cutting clip and save this clip as a wave file in destination folder. Save all the cut files in the same file. The number of files for each emotion should be same.

#### **4. 4 Features Extraction**

Once we have created the emotional database, the feature extraction phase comes. This phase/step consider the maximum extracting features for the saved files. Among the huge amount of data, how and which sample should be taken. Features extraction is also a part of the collecting the data. This phase collect the sample of files those contains almost same kind s of the features. This will make the model that can works on this kinds of files. All the properties of the sample files are homogeneous. The performance of the model is based on the input data. If the data is homogeneous then it provides maximum likelihood expectation.

#### **4. 5 Training the model**

As the name suggest that there should be training for the model. The development of the model is done under last two steps. Now our model should be getting trained. For training the model there is a database that contains some rules and properties. The main objective is to make some kind of mechanism that can fire some action when some properties matched to the properties. This training can be improved further by the help of the learning process. The after all main agenda is somehow to make the machine that can easily understood and recognize the emotions for the unknown speech sample with some emotions.

## 4. 6 Test the model

Testing is very essential to the any model or system. When system developed for the objective then testing play an important role. Testing part describe how our system is working and how much it giving the desired result. Testing may be of several kinds. Some of the types of the testing are unit, integrated, utility based, white box, black box and system testing. Basically testing part allows the error free and desired output from the unknown speech. In this process/step we provide some input files as unknown files the after executing and compiling the coded to the data it gives us the confusion matrix. This confusion matrix shows us how much our input files are matched.

## 4. 7 Results Analysis

The result can be described on the basis of the confusion matrix. The matrix consists of numbers of matched and unmatched files. The usual process for the recognition of emotional states from human speech is to be comes up in different industrial applications. One of them is very powerful is Speech emotion recognition. This may take the image of a typical pattern recognition. Not only this but also this can be used in providing the help to identification and recognizing the features of an image. Our results are basically depends on the confusion matrix. Table of confusion/ confusion matrix is a stand with the combinations of two rows and two columns. These are reports to the number of false positives; false negatives and remaining are the true positives, and true negatives. In artificial intelligence, this matrix is a exact table explain that new and old, allows big apparition of the recital

of the model and to the system. This matrix has two different forms as per the learning; this is called in supervised learning. In case of unsupervised learning we refer it a matching matrix.

## **Predicted Class**

## **Actual Class**

CatDogRabbitCat530Dog231Rabbit02116. Table (4. 7) A general form of Confusion matrix Every column of the matrix is the symbol of the instances in a predicted class, and on the other side every row shows instances in an actual class. In rest of the other fields this matrix is known as the contingency table (error matrix). As the figure 4. 7 shows the simple relationship among the table how the predicted class is match/different to the actual class.

## **4. 8 Results Conclusion**

Our result is the description of the three emotions. These three emotions are happy, anger, sad. The resultant vector is mainly classified in to the most of these three classes. This result does not provide the homogeneous results. The result is varying from sample to sample of the input files. The unique results can be occurring only when two identical input classes will provide to the GMM model. The result shows the compatible ratio between the actual and predicts class. In our result the maximum matching ratio is comes up in the Sad emotion. This shows that the properties of the input (unknown speech) to the output (known speech) is matchingAt maximum when input file is of sad types. The vice versa result shows it becomes minimum when it takes anger files at the input end.

## Expression

**Anger**

**Happy**

**Sad**

**Anger**

55025

**Happy**

106010

**Sad**

017. 5757. Table 4. 8) Confusion matrix for three emotions

The support vector machine can be arranged in between the emotions categories. The vectors line from to the upper vector elements are show s the unpredicted elements to the emotions. As the above diagram shows that when we are interesting to find out the anger emotion and input file is anger then it gives maximum value for matching this emotion. This can be understood by view the first row of the matrix. In the first row the value are 55, 0, and 25. The matching value is in the just below of the anger column and anger row i. e. 55. In the above result it shows in the first row the matching value for the anger emotion to happy is 0 (Zero). This shows that in the input file there is no element for the happy emotion. The other factor is that in that file very few properties are available for the sad emotion. So the maximum value is 55 for the anger emotion. Hence it shows for the highest maximum value is available for anger emotion is 55. Again this matrix has the last emotion is

Sad. The value for the third row to third column is maximum. The value for the third row to the first and second column is low. Hence the confusion matrix shows the maximum matching values only for the diagonal elements. This is nothing but the support vector machine for the three emotions anger, happy and sad. The conclusion matrix shows results accuracy more than 63% in the speaker dependent recognition of three emotions. The overall training can be increase this percentage of the model. This chapter will describe the overall summery of the present thesis and the conclusion. This includes the following four sections. This summery of the present result is based on the requirement of the emotions. Sometimes the emotions may are the absent in the present Gaussian mixture model. This model has its own special features.

## **5. 1 Summary of present work**

The conclusion part describes about the overall result of this approach. The overall result has been discussed above. Proposed approach can be describes in many of the different ways. There are several approaches and model that can be implement the emotions. Hence there for in communication between two independent parties or object the medium is necessary. This medium can be speech (audio), video or any gesture. These gestures are very interactive and not easy to learn for the emotions. The heart feeling of the human can only understand by the human not by machine. If we are able to create such kind of power (Technology) that can recognize the feeling of human, then this will be a very high jump in machine revolution. A person what he/she is thinking, not easy to guess by machine.



But after seeing the speed of progress of robotic world this is not so far for machine to capture the emotions. Machine cannot perform all the things and issues like a human but can copy for the best. There is nothing to say impossible to learn for machine. The time will come when almost all the works of the human will be controlled by machine. In some countries there is industrial works that is depending on the machine. The overall summary of the result analysis is described in detail in section 5. 2. The present work is concern to Gaussian mixture model. The result shows that model is quite trained to the appropriate emotions. The model provide the maximum matching results when the homogeneous relation is in between the input and output files. The result will be at of its maximum level when there will be matching in between the unknown speech and known speech. As this was done and same result was obtained. This can be better understood by plotting the graph in between the unknown and known speech of emotions. Plotting of a graph may have of different types like, bar graph, pie graph and circular graph. The graph might have the different attributes and various features related to the emotions. The main concern is in the use of Mat lab platform. The Mat lab version 7. 0 is the latest version, which includes almost all the required features and as well as some of the advanced features. Gaussian mixture model gives very attractive and interesting result in some the applications. The quality of the sound file may affect the performance of the system. So we should ensure about the input to the system. Every times fault cannot be considered to the system. There is still difference in recognizing the same emotion but with different scenario. These are like a

sound for saying " Today is Wednesday" for child, for man and for woman.

This kind of the problems rises.

## **5. 2 Contribution of present work**

As we know about the relationship between the science and requirement, " need is the mother of invention". This contribution provides the new area for more research in the emotional learning. The present approach is still active in research and development (RAD). To control on machine by machine or human will be very effective in decision making of human life. In recent time, a mixture of approaches is projected to perk up the performance of speaker detection systems by using different technical aspects. The prosodic features are, usually, used as parameters for the glottis source. These are known to carry specific speaker information such as the melody, intonation and loudness [29]. Similarly the proposed approach can be enhanced by using these features to generate the specific task based. The emotional database can be comes from any emotional sources. Based on the database the model can be trained and test. Apart of RAD the emotional databases are also helpful in academics, organizations, and industrials works. This work can be used in future for human life in saving the extra efforts for machine learning. This can be implementing for the small daily life routine works. In the starting this can be tested on some robotic at laboratory level. If the results are become positive then it can move in the publically. The production can be at large level once the system gets trained by the training. The limitations and the advantageous for every system should be mention in the manual or handbook. To control and use of a machine is not so typical for human but it

is not so easy for machine. The other contribution for this work can be for the growth of the nation in the science world. This growth in the artificial science is a fine tune for the computers and for human. The concept of radio wave transmission can be used in saving and passing the message. Most of the applications can be share the mutual resources in the machine learning. There will be new inventions for machine if it has the intellectual property. Present works also can be test in the medical field. In the medical fields there are numbers of experts system are available. To implements the learning agent we should need the some of the repeated words (frequently using words) and save the dictionary for the particular language. This dictionary must be updated on time to time. We also give the details some of the application of the machine learning in the real world. Now day's technology is continuously going to be changed. So we need to update our self and as well as update our machines. There is need of, Research and development department almost in the every industrial, organization. Some of the companies is hiring experts to their fields for RAD. Several studies show a high correlation between some statistical measures of speech and the emotional state of the speaker [31], [32, 33, and 34].

### **5. 3 Conclusion from the present work**

In place of providing, good results the proposed approach is devoted to exclusive speech results. The comparisons with other models can be done with the help of any speech recognition model. In present approach it varies from speaker to speaker. Generally this will provide better results when a single speaker has produced different emotions.

## **Expression**

**Anger**

**Happy**

**Sad**

**Anger**

55025

**Happy**

106010

**Sad**

017. 5758. Table (5. 3) Confusion matrix for three emotions (Anger, happy, sad)The changes will come on different user or speaker. The different speakers are having different sound in audio and according to that they have different attributes of audio speech. The combine result of all the different speakers will make a huge amount of changes in speech for a particular emotion. So, to achieve the better result number of speaker should be less. The lot of difference can be viewed as the confusion matrix. This matrix shows the clear difference between three emotions. The value for emotion recognition is highest when both parts (input and output) are of same class. So the overall conclusion comes from this result is this model is quite well in the homogeneous system for emotion recognition. In, thesis we discussed about machine learning aspects. The importance of emotions in machine learning as well for human is described in section 1. 2, 1. 3 and 1. 4. Human is very sensitive about the emotions. These emotions can work as a mediator

for learning. A human can simply know or guess about the activity of a person's mind through the help of some emotions. Emotions are can be treated as powerful resources for machine learning. Every time there is need for machine learning. In the total meaning we can say that machine learning is complex tasks. This can be made easy by the help of some technical methodologies. In simple we described the classification of emotions. Later on we described some methodologies about classification and prediction of emotions in the section 3. 3. In the last we described the proposed approach with the help of Gaussian mixture model in the Matlab platform. Using Gaussian mixture model, we mainly emphasis on the human emotion recognition system through spectral features. Data is again major prime factor that decides performance of the system. In the present work, we have explored vocal tract (spectral). To give the better result we can have a tendency to save and update an emotional database (EDB). This EDB will work like a backbone for the learning system. The Gaussian Mixture Model (GMM) is a classifier in emotion recognition system in our approach. That is nice with emotion prediction system.

## **5. 4 Scope for future work**

Scope of the proposed approach consist major aspect for artificial intelligence. For the future work we mainly concern in making an interesting database for the machine learning system. The second efforts will be for the development in the multi model emotion prediction system. Emotions are also generator of the good and valuable literature. This concept of Emotional Intelligence is well associated to two major aspects: intelligence and

emotion. In the first end intelligence as well as emotion, both have integral aim for most psychologists. This can be exemplify by intelligences exists able to recognize valuable and significance data. At other end emotions provide the harmonized and well sequenced responses to the outside world. Hence this emotion intelligence concept is the capability to explanation about true and relative emotions. The planning and research for emotional intelligence should go on with to be positive in laboratory works and the industrial requirement. The positive results will guide more in the favor of human. These emotions are the base for creating or developing the new situations regarding the human life. This is not possible for anyone to live without the emotions. These emotions give us an interesting and multidimensional platform to learn. This is the nature of the human; he/she may get bored after listening or watching the repetitive tasks in the life. It may be interesting for few times but not every times. This would quite helpful to the researchers as well as in academic field. We think academic persons, researchers and industrial expert will be of the same opinion on the magnitude of learning concept. The emotional intelligence may reflect some times negative response. So it is again the point to be keeping in mind use right time and right place for the emotions. We generally cannot relate everywhere same emotional activity. These emotions are also helpful to make the character of a person. Besides the parental attributes and qualities, these emotions are strong pillar in developing the character of a person. One more attribute is effect of environment. The further work may include this phenomenon of developing the character of a person. Apart of the industrial workshops this approach can be taking on in the institutional

activities. The engineering students can make such kind of a robot that will fill full the emotional requirements. The robotics competition should be organized at the national and international levels. This will make contributes in healthy and positive research towards the machine learning. Some of the institutes are organizing these kinds of events to motivate their students and techno crafts. These kinds of workshops are also helpful in the technical growth of the country. Some workshop programs (depending on time availability) are organizing in the Indian schools, colleges and industry level by the name of Techfest. The main motive of these kinds of seminar, workshop is, to aware the updated technologies and trends in the world wide to the students and educators persons. Clearly, this approach needs more research on the emotional intelligence to make machine learning more effective and interesting.