

Smart Feedback System

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Abstract- Knowing the real time pulse of the student is a heavy task by a teacher. The existing solutions for this is collecting feedback from the users manually with the help of surveying and google forms. But this solution is not more efficient. This may not produce the genuine result. This is because though a student didn't understand the class, he used to give 5-star rating for that teacher. This may produce false results. So here we are with a solution Smart Feedback System. The feedback of the student will be automatically taken by them using their face gestures. This system will take all the students experience at that particular class. And the final result of this system is the scale of rating from 2-10 which indicates how the class is more interactive with the students.

INTRODUCTION

We can find human emotions by various things like facial expression, body postures, gestures and through speech. Among them facial expressions is easy to obtain. Facial expressions can be used to obtain 5 categories of expressions like neutral, happiness, surprise, anger and surprise. The baseline of the test will be around 15.6%. Emotion is very much important, very complex and most researched topic in the fields of biomedical engineering, psychology, neuroscience and health. Studies in this area focus on detecting human facial 5 basic emotions. There are diverse methods in these works to detect emotional states such as electroencephalography (EEG), galvanic skin response (GSR), speech analysis, facial expression, multi modal, visual scanning behavior and so more. It is very intricate to detect the emotions and separate among them. Early years emotion is starts to become an anxiety as a vital count towards the modern technology world. It rises the anticipation of new emergence for intelligence gear. In the fresh ages, with the swift evolution of pattern recognition and artificial intelligence much more and more research has been directed in the field of human-computer interaction technology. Feature detection procedures built on motionless images include Gaborwavelettransform, Haar wavelet transform, Local Binary Pattern (LBP), and Active Appearance Models (AAM). With the superior kind of scheming then that machine could

detect the supplementary penalties and by which menfolk could sidestep serious environments and lot more. We are implementing face detection using Conventional Neural Network (CNN) and further classify the results into two states either active or not active based on the emotions.

LITERATURE REVIEW

The enthusiasm behind selecting this theme especially deceits in the giant investments bulky corporations do in responses and reviews but flop to get reasonable reply on their investments. Emotion Detection through facial motions is a technology that intentions to progress product and facilities presentation by nursing customer behavior to certain products or staff by their estimation. "Substantial discussion has mounted in prior concerning the emotions represented in the world famed work of genius of Mona Lisa". British Weekly "New Scientist" has detailed that she is in fact a blend of many distinct emotions, "83%happy, 9% disgusted, 6% fearful, 2% angry". We have likewise been inspired observing the benefits of physically handicapped people like deaf and dumb. But if any normal human being or an automatic system can appreciate their wants by perceiving their facial expression then it develops a lot informal for them to make the parallel human or automatic system appreciate their wishes. Primarily, we would like to outline the elementary impression of the FED system and describe the most vital problems which should be taken under attention in the procedure of system strategy and progress. Then, each FED system phase will be defined in particulars, namely: main duty, emblematic difficulties and future approaches. Additionally, the fresh advances in the zone offacial emotion detection analysis will be itemized. To conclude, some model applications of FED systems will be revealed to show that they are extensively used in many arenas of science as well as in everyday natural life.

Existing Solution

The existing solutions to collect feedback from students:

By using sampling technique: Randomly the teacher will interact with 5-6 students per class and collect their feedbacks.

By using google forms: All the students can rate each teacher on a scale of 1-10.

Problems with this existing solution:

With the sampling technique, the teacher can able to collect the feedback with only 5-6 students which he interacted with.

Possibility of fake submissions and multiple submissions which may deviates the exact result.

PROPOSED SOLUTION AND RESULTS

In harmony with the disadvantages of Present system, we are going to develop this project. The strategy starts with the preparing CNN model by pleasing an input image (static or dynamic) by accumulating a convolution layer, pooling layer, flatten layers, and dense layers. Convolution coats will be added for better accuracy for large datasets. The dataset is collected from CSV file (in pixels format) and it's converted into images and then classify emotions with respective expressions. Here emotions are classified as happy, sad, angry, surprise, neutral, disgust, and fear with lots of images for the training dataset and huge images for testing. Each emotion is expressed with different facial features like eyebrows, opening the mouth, raised cheeks, wrinkles around the nose, wide-open eyelids and many others. Trained the large dataset for better accuracy and result that is the object class for an input image. Based on those features it performs convolution layers and max pooling. In this proposed system, Deep learning is used with the help of Keras, contains several Models. Among those models, the facial emotion of the human is classified. Here emotions are classified as happy, sad, angry, surprise and neutral with lots of images for the training dataset and huge images for testing. Each emotion is expressed with different facial features like eyebrows, opening the mouth, raised cheeks, wrinkles around the nose, wide-openeyelids and many others. Trained the large dataset for better accuracy and result that is the object class for an input image.

BENEFITS OF THE PROPOSEDSYSTEM

- 1 Effective when the features are quite large.
- 2 Provides better accuracy in results.
- 3 High precision power.
- 4 Takes less processing time.



Examination Results:

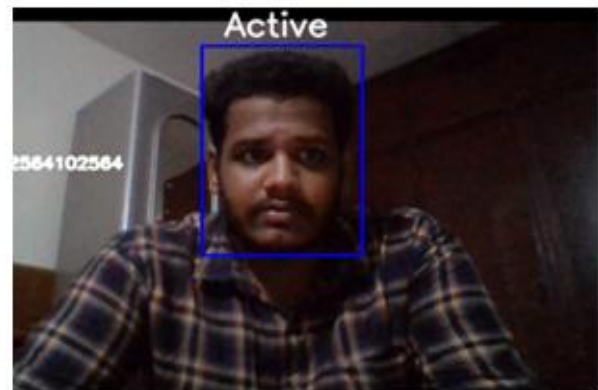


Fig (1) Student Active



Fig (2) Student Not Active






Fig (3) No Face Detected



Fig (4) Student Active

Here from the above Fig (1) & Fig (4) we can see that model has detected the student listening class actively and in Fig (2) it's clear that student is not paying interest towards the class so the model marked it as "Not Active" state. In Fig (3) there is no face detected that implies there is no one in front of camera so it is marked as "Not Active" state.

TEST RESULTS

S. No	Test Case Title	Output Image	Expected Output	Result	Test Results
1.	Active Student		Active	Active	Pass
2.	Not Active Student		Not Active	Not Active	Pass
3.	No face detected		Not Active	Not Active	Pass

CONCLUSION

In this project, the proposed CNN algorithm predicts the accurate results of the human emotions and further classifies them into whether the student is active or not. FEREC is a novel way of facial emotion detection that uses the advantages of CNN and supervised learning (feasible due to big data). The main advantage of the FEREC algorithm is that it

works with different orientations (less than 30°) due to the unique 24-digit long EV feature matrix. The background removal added a great advantage in accurately determining the emotions. FEREC could be the starting step, for many of the emotion-based applications such as lie detector and also mood-based learning for students, etc.

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