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# Smart Emotion Learner Using Viola Jones Algorithm

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**ABSTRACT:** Students interest and involvement during class lectures is necessary to track to know the grasping concepts and significantly improves academic performance of the students. Direct supervision of teachers and professors is the main reason behind student attentiveness in class. Still, there is sufficient percentage of students who are even under direct supervision tend to lose concentration. By using the e-learning environment, this problem is solved due to absence of any human supervision. This calls for an approach to measure and identify appends of attention by a student in the learning session. This study is carried out to improve student's involvement in learning platforms by using their facial feature to extract mood patterns. Analyzing the moods based on emotional states of a student during an online lecture can provide interesting results which can be used to improve the efficiency of concept understanding in lectures

**KEYWORDS:** INTERNET OF THING (IOT), Smart Cities , human disabilities

## I. INTRODUCTION

Classroom teaching assessments are designed to give a useful feedback on the teaching-learning process as it is happening. The best classroom evaluations additionally serve as significant sources of data for instructors, helping them recognize what they taught well and what they have to deal with. In the paper, we propose a deep learning method for emotion analysis. This work focuses on students of a classroom and thus, understand their facial emotions. Methodology includes the preprocessing phase in which face detection is performed, LBP encoding and mapping LBPs are done using deep convolutional neural networks and finally emotion prediction.

## II. LITERATURE SURVEY

There are many online home service systems in existence which are discussed briefly in this This application will help a lot of teachers to know the level of understanding of students in schools, colleges or universities. Given the importance of the application in this information age, a lot of researches has been carried out to improve and help the needy students. This section will present past, present and prospective studies undertaken for the purpose of improving the learning approaches. Teaching and learning methodologies have transcended to new levels after the boom of information technology. As a result, the quality of education and number of learners has increased substantially. Still, the modernized way of learning creates problem that affects a students learning due to unavailability of any direct supervision.

An teachers can provide some interest into students understanding during lectures, therefore students involvement in class has direct correlation with the professional aptitude of the teachers. Direct supervision not only facilitates learning but also keeps the student synchronized with the course objectives due to instant communication with the teacher at any time during the lecture. Lack of communication has shown that affected students may experience high levels of frustration. As supervised teaching is very critical to the learning of the students, it presents a different set of challenges to teachers and students. Students visits a physical campus location and may have difficulty in establishing relationships with faculty and fellow students. Researchers who study

distance learners must understand and account for these differences when investigating student understanding ,mentioned three important types of interaction in learning courses:

- (a) Syllabus Content,
- (b) Teachers / Prof. teaching approach, and
- (c) Students Mood .

Teachers should provide all types of interactions prompting attentiveness in their courses as much as possible. Learning requires use of video, audio, text to simulate the traditional class and learning environment as closely as possible. Learning environments may be used for a numerous educational purposes.

Modern trends indicate that education will come as part with traditional education methods in the near future. In an learning environment, teacher and student are in direct interaction and content is provided by the teachers thorough lectures. As there is no means of instant communication, machine can only understand what it records using standard man machine interfaces. As there is no verbal communication between the students and the application, facial expressions are the only means that can provide concrete information about a students mood and involvement during the class.

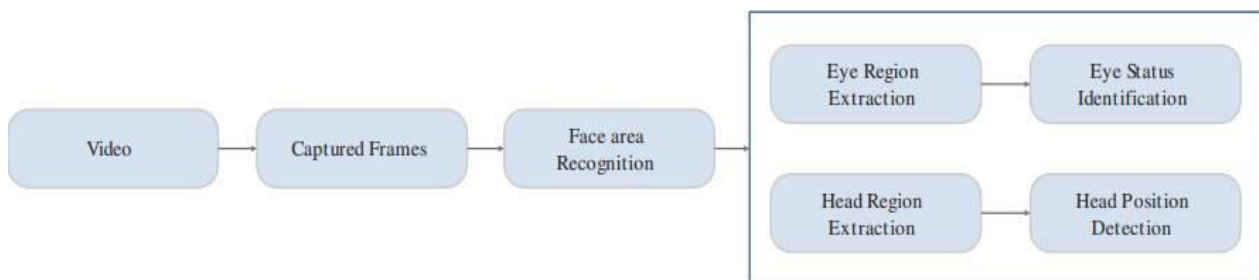
### III. PROBLEM DEFINITION

Design and Develop a standalone application that will help to identify feedback of teachers lecture depending on the student emotion.

The main objective of this project is to design an efficient and accurate algorithm that would generate a feedback on current emotional state and behavior of the user.

The algorithm designed requires less memory overheads, less computational and processing time, reducing the cost of any additional hardware cost for sensors.

### IV. PROPOSED SYSTEM



There are various face detection algorithms to extract the details of the face region.

#### Viola Jones:

This is the first face or object detection algorithm framed by Viola jones for solving the issue of face detection. It is projected in three significant ways namely through

- (a) an integral image (a new image) for the computation speed;
- (b) an efficient classifier called Ada Boost for choosing a small number of visual features from a very large set of potential features;
- (c) a process of cascade classifier for locating the required facial regions.

### Algorithm:

The Viola Jones algorithm has four main steps, which we shall discuss in the sections to follow:

- Selecting Haar-like features
- Creating an integral image
- Running AdaBoost training
- Creating classifier cascades

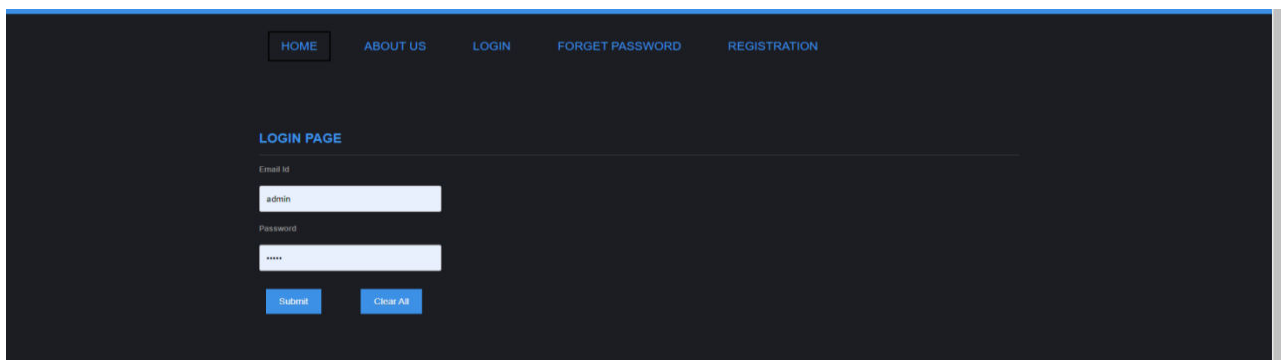
Given an image, the algorithm looks at many smaller subregions and tries to find a face by looking for specific features in each subregion. It needs to check many different positions and scales because an image can contain many faces of various sizes. Viola and Jones used Haar-like features to detect faces

### Emotion Detection:

- Suppose we have a facial image in grayscale.
- We can get part of this image as a window of 3x3 pixels.
- It can also be represented as a 3x3 matrix containing the intensity of each pixel (0~255).
- Then, we need to take the central value of the matrix to be used as the threshold.
- This value will be used to define the new values from the 8 neighbors.
- For each neighbor of the central value (threshold), we set a new binary value. We set 1 for values equal or higher than the threshold and 0 for values lower than the threshold.
- Now, the matrix will contain only binary values (ignoring the central value). We need to concatenate each binary value from each position from the matrix line by line into a new binary value (e.g. 10001101). Note: some authors use other approaches to concatenate the binary values (e.g. clockwise direction), but the final result will be the same.
- Then, we convert this binary value to a decimal value and set it to the central value of the matrix, which is actually a pixel from the original image.
- At the end of this procedure (LBP procedure), we have a new image which represents better the characteristics of the original image.

### Login Module:

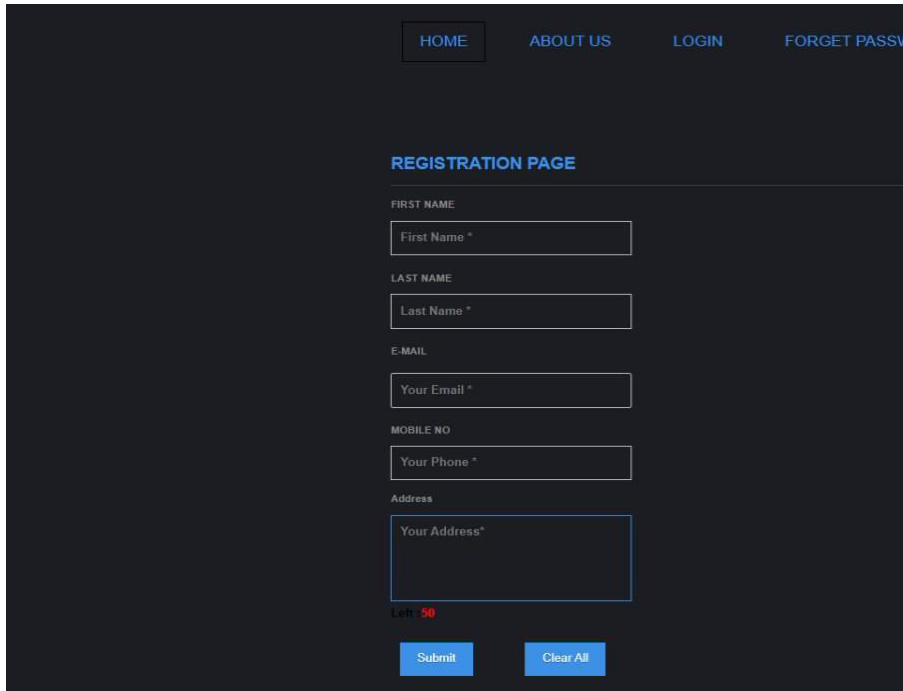
In this module HOD, principal or teacher can login. Once login they can upload the video and see the bar chart which will show student emotion while attending the lecture.



The screenshot shows a web application interface with a dark background. At the top, there is a navigation menu with buttons for HOME, ABOUT US, LOGIN, FORGET PASSWORD, and REGISTRATION. Below the menu, the title "LOGIN PAGE" is displayed. There are two input fields: "Email id" with the value "admin" and "Password" with masked characters "\*\*\*\*\*". At the bottom of the form, there are two buttons: "Student" and "Clear All".

### Registration Module:

In this module teachers can do the registration, once all personal info is put an automate email will be send to validate the email id. This email will contain the password.



## V. CONCLUSION

The system thus aims at providing the teachers with a cheaper, additional hardware free and accurate emotion based feedback system. This project will be of great advantage to teachers to redefine the teaching plan or can repeat any lecture if emotion are dull. This will help students to achieve good marks.

## REFERENCES

1. G. Eason, B. Noble, and I. N. Sneddon, "On certain integrals of Lipschitz-Hankel type involving products of Bessel functions," *Phil. Trans. Roy. Soc. London*, vol. A247, pp. 529–551, April 1955. (references)
2. M. Nur-Awaleh and L. Kyei-Blankson, "Assessing E-learning and student satisfaction in a blended and flexible environment," 2010 International Conference on Information Society, London, 2010, pp. 481-483.
3. C. Leghris and R. Mrabet, "Cost Comparison of E-Learning Solutions," 2006 7th International Conference on Information Technology Based Higher Education and Training, Sydney, NSW, 2006, pp. 817-824.
4. Fresen, J. (2007). A taxonomy of factors to promote quality websupported learning. *International Journal on E-Learning*, 6(3), 351-362.
5. J. Yu, "An Infrastructure for Real-Time Interactive Distance E-Learning Environment," 2009 First International Conference on Information Science and Engineering, Nanjing, 2009, pp. 3219- 3222.
6. Mohamed Sathik M, Sofia G (2011) Identification of student comprehension using forehead wrinkles. 2011, International Conference on Computer, Communication and Electrical Technology (ICCCET), pp 66–70.
7. N. Fragopanagos and J. G. Taylor, —2005 Special Issue: Emotion recognition in human- computer interaction. *Neural Networks*, Neural May 2005. *Networks-Special Issue: Emotion and Brain*, vol. 18, pp. 389–405.
8. Rothkrantz, L.J.M. E-learning in virtual environments, *Communication & Cognition*, Vol 42, No. 1&2, pp 37-52, 2009.





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