

STUDENT LIVE BEHAVIOUR MONITORING IN ONLINE CLASSES USING ARTIFICIAL INTELLIGENCE

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Abstract— Due to the health emergency situation, which forced universities to stop using their centers as a means of teaching, many of them opted for virtual education. Affecting the learning process of students, which has predisposed many of them to become familiar with this new learning process, making the use of virtual platforms more common. Many educational centers have come to rely on digital tools such as: Discord, Google Meet, Microsoft Team, Skype and Zoom. The objective of the research is to report on the impact of student learning through the use of the aforementioned videoconferencing tools. Most of them became familiar with the platforms; however, less than 24% qualified that their academic performance has improved, some teachers still have difficulties at a psychological level due to this new teaching modality. In conclusion, teachers and students agree that these tools are a great help for virtual classes. The primary objective of this project is to create a self-sufficient agent that can offer information to both teachers and pupils. The level of student involvement is directly related to important academic outcomes like critical thinking and the marks students get in a topic.

Keywords— Face recognition, student behaviour, live detection, artificial learning, flask web app

I. INTRODUCTION

Human behaviour analysis is an important area of computer vision research dedicated to the detection, monitoring and understanding human physical actions. The teaching and learning cycle may be regarded to be the most critical operation in the academic institution. During classes, attendance and student behaviour are closely monitored alongside teaching activities. Information has demonstrated that student interest is a central element in participation and the project is designed to create a self-sufficient agent that can offer information to both teachers and pupils. The level of student involvement is directly related to important academic outcomes like critical thinking and the marks students get in a topic. Information has demonstrated that student interest is a central element in participation and performance.

II. PROJECT FEATURES

The core features of this project is to predict behaviour of student in online classes when student is live. Student features are captured from every frame and data is analysed based on different types of activity related to eye movement, mouth movements, head movements and analysis is done on student active status on that respective class. Graphical representation is used to show performance of student.

III. SYSTEM ANALYSIS

System Analysis is the important phase in the system development process. The System is studied to the minute details and analyzed. The system analyst plays an important role of an interrogator and dwells deep into the working of the present system. In analysis, a detailed study of these operations performed by the system and their relationships within and outside the system is done. A key question considered here is, “what must be done to solve the problem?” The system is viewed as a whole and the inputs to the system are identified. Once analysis is completed the analyst has a firm understanding of what is to be done.

IV. PROPOSED SYSTEM

In proposed system artificial intelligence is used to predict behaviour of student in online classes when student is live. Student features are captured from every frame and data is analysed based on different types of activity related to eye movement, mouth movements, head movements and analysis is done on student active status on that respective class. Graphical representation is used to show performance of student.

V. PROJECT ARCHITECTURE

This project architecture describes how the application is going to function. The detailed architecture is explained below.

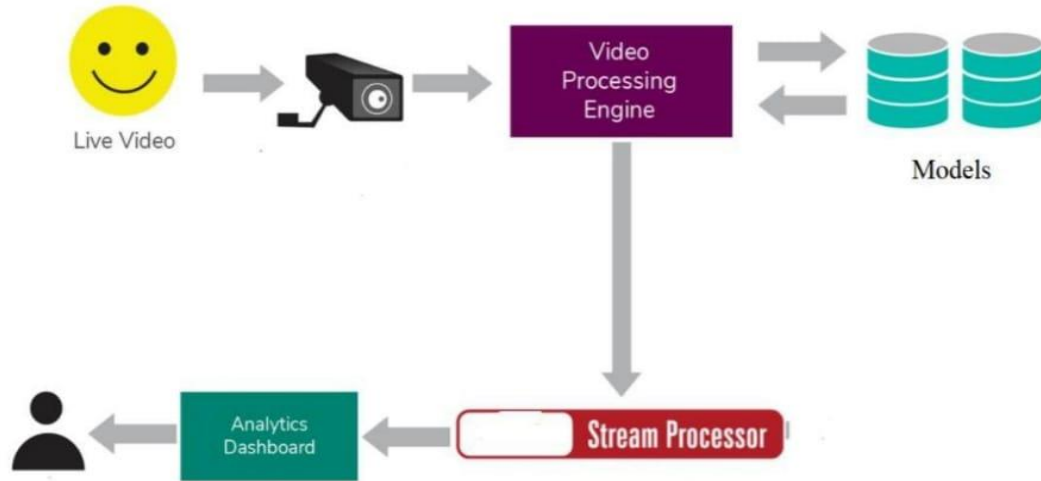


Fig 1: Project Architecture

VI. LITERATURE

A. CLIENT:

This application is run by student where camera will open and student's video is displayed on screen. Details of each frame are shared is sent to other modules for processing and analysing with trained model. Result is shown in graph after analysis.

B. SERVER MODULE:

This module is executed to track details of student and analyse actual performance. Each frame is sent to face processing module for checking with trained model. Server Module is used to process data between client and face processing module.

C. FACE PROCESSING MODULE:

This module each frame is taken as input and shape predictor model is used to predict various aspects of features like (eye aspect ratio, mouth aspect ratio, drowsy, yawn, head pose. After calculating these values are sent to server module

VII .EVALUATION OF MODEL

A .FACEACTION NOTICES

In this image, once the server is run on a site this is the screen it displays and runs on the background in the command prompt.

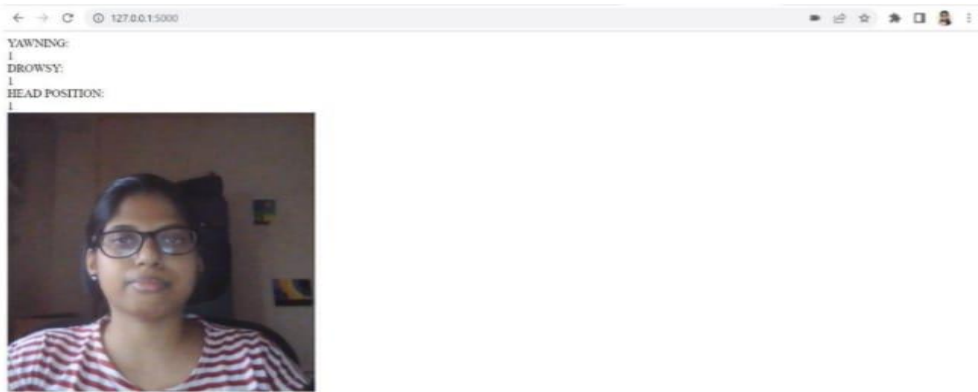


Fig 2 face action notices

B.MAIN SERVER SITE

This is where the main page to get recorded all the face actions from the video which is shown in figure and shows the how we are active in the classes/meetings etc.

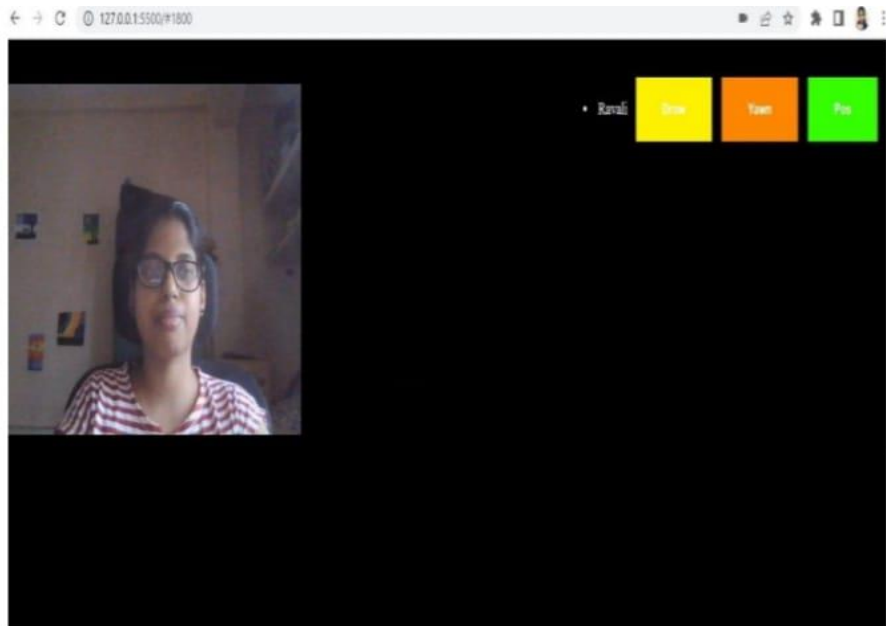


Fig 3 main server page/site

C.OUTPUT-1 GENERATION

This is where the output in terms of graph, here we can observe all the actions like Drow, Yawn, Pos etc.

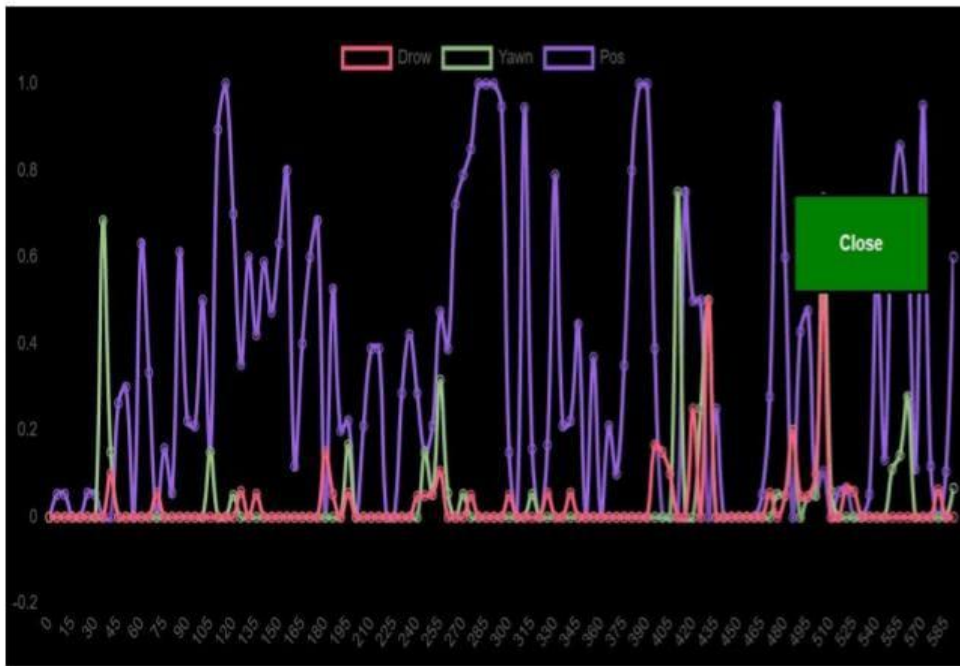


Fig 4 generating output 1

D.OUTPUT-2 GENERATION

This is where the final output in terms of pie chart, in this pie chart we can get result like we are active or not, we are yawning or not, looking at screening or not etc., like this we get the result.

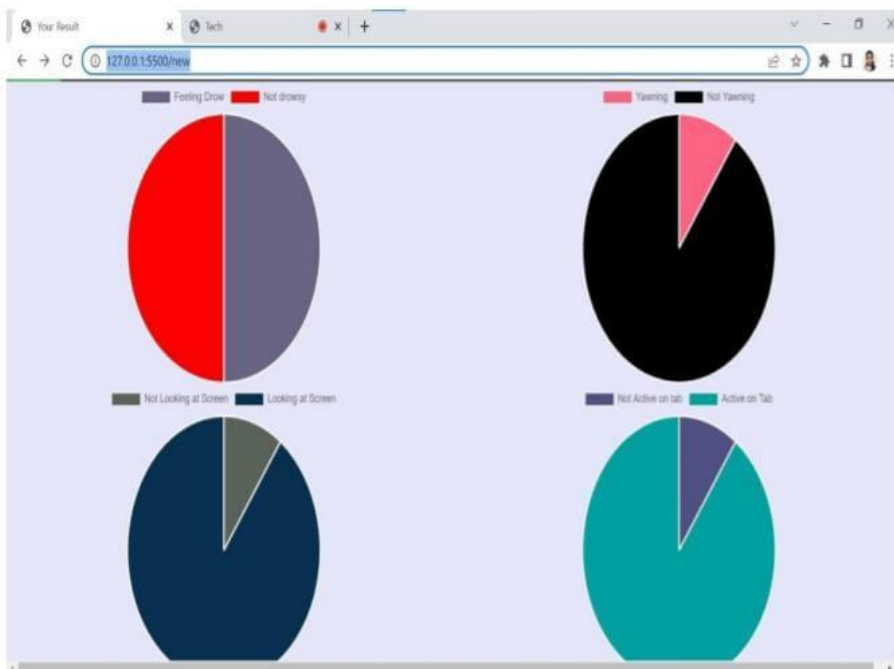


Fig 5 generating final output

VIII CONCLUSIONS

It is used to evaluate the student's observable actions in the classroom teaching system. Student features are captured from every frame and data is analysed based on different types of activity related to eye movement, mouth movements, head movements and analysis is done on student active status on that respective class. Which display's the live identification of student actions based on specified scenes. The evaluation was created right after the live feed review.

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