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A SURVEY ON MODERN DAY EXAMS, CHEATING AND DETECTION OF CHEATING

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Abstract: After the start of the COVID-19 Pandemic, Online Examinations have become a necessity. With this new format of the examination, there has been an unusual increase in grades and the passing percentage of students, which can be because of cheating in exams and lack of a system that protects the integrity of exams by detecting any sort of cheating. Proctoring the exams with Face Detection can at least reduce it. The proposed method will rely less on manual invigilating and make it Automated.

Index Terms **- Face Detection, Proctoring, Online Examinations.**

I. INTRODUCTION

Cheating is not a new phenomenon, it has always been there in the world of examinations, Students have always found a way to cheat in offline examinations, like carrying notes or writing on their hands or just straight-up copying the answers of the candidate next to them. This was still manageable with an Invigilator whose sole responsibility was to stop this from happening. But since the start of the Pandemic, exams are being conducted online which makes it impossible for teachers to invigilate exams manually. As one teacher can't look at all students at the same time even if they manage to do it somehow, it would be physically impossible to tell if students are cheating or not. This lack of proper invigilating during online examinations has resulted in an exponential increase in cheating in exams. In an anonymous survey, students have admitted to cheating in examinations, many even revealed this was their first time cheating as they felt they won't get caught.

A survey reported that the increase in copy due to online examination has been up by 196%, the reason we believe that student's copy is lack of fear of getting caught, fear of failing in exams.

Lack of fear of getting caught is something we can control compared to the fear of failing as it is totally up to students. In our proposed model we hope to solve this problem, by creating a system that detects the faces of the candidate and their way of giving exams and check whether they are copying or not. We hope to go about this is by already collecting the information of students or candidate who is going to give exams, using the university database, then when on the day of the exam, we would request the student to click a live picture so that we can verify if the person giving the exam is a valid student. While also continuously checking on them to see their movements during the examination and if any malpractice is detected we will give out some warnings, but after those warnings, we will just automatically submit the exam for students. We also hope to help teachers create, grade and showcase exam and exam results. This solves the problem that teachers face of juggling multiple applications to create an examination.

II. LITERATURE SURVEY

[1]AI-Based Proctoring System for Online Tests - Sahil Motwani, Chirag Nagpal, Manav Motwani, Nikhil Nagdev, Dr Anjali Yeole.

This paper throws light on the current scenario in which how the method of remote learning is booming and how examinations are conducted. Some major universities are trying to cope up with this change in learning pattern while conducting examinations by using some latest technologies like Artificial Intelligence to tackle this challenge of conducting examinations.

[2]Examining the Effect of Proctoring on Online Test Scores -Helaine M. Alessio, Nancy Malay, Karsten Maurer, A. John Bailer, and Beth Rubin.

The objective paper was to compare the test results of 147 individuals who took part in an online course to those of the same individuals who did not have the capacity to do so. Understudies scored lower on average than those who took part in non-delegated tests. They also utilized less time in tests that were administered through programming than those that were delegated.

[3]e-Parakh: Unsupervised Online Examination System -: Anoop Kumar Pandey, Saubhik Kumar, Balaji Rajendran, Bindhumadhava BS.

This paper suggests a system eParakh, an online testing system that candidates can also use from mobile phone apps. This significantly reduces resource requirements and significantly reduces candidate costs. The application uses a variety of techniques to monitor and unattended exams, including live video and audio streaming around the candidate as well as the candidate.

[5]Cancer of Cheating Behaviour in students during the examination - Dr Leena Muralidharan, Dr Sangeeta Gaur.

This paper suggests that fraud should be banned by understanding the methods and causes of fraud and encouraging the younger generation to achieve their goals through diligence and ethics. People have become more ambitious to achieve success and achieve their goals. They do not hesitate to use unjust means. Exam fraud is one such behaviour that spreads rapidly among students. Students use different types of cheating in the early stages of education, which can become their habit and continue this process in higher education and other stages of life.

III. PROPOSED SYSTEM

In this proposed system, we aim to create an Application that analyzes any sort of cheating that may occur during examination.

Important aspects of our system

1. Dataset- As our system depends mostly upon the face detection of our candidates, we needed a trained data model that was great at face detection and to ensure that we needed a dataset to train our model, which we hope to collect from teachers which they can submit from university data or maybe make student submit it beforehand.

2. Trained Data Model- This data model will be trained to provide a user image when provided the name or identification number of a student. Which will be sent to the classification for processing.

3. Preprocessing- While giving exams we expect students to click a picture for verification, which we hope to convert in binary form so that it can be checked in Haar Cascade Algorithm.

4. Feature Extraction- Every human face has unique features and our goal here is to extract those features to compare and authenticate our users during the exam.

5. Loop in Examination- We will regularly check whether the face that has been giving the exam is constantly there and has not left or has been replaced, if we have any such malpractice, we will automatically cancel the exam.

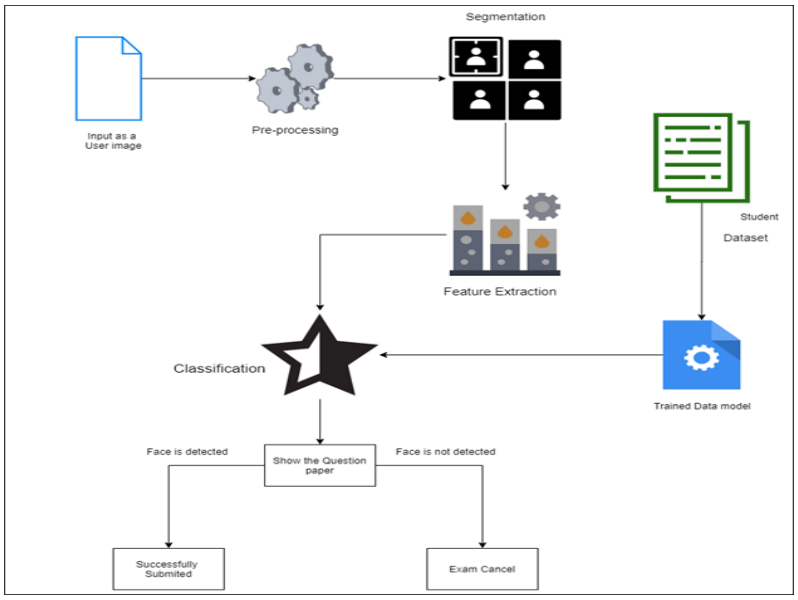

Figure 1

1. Algorithm in use

The core basis for Haar classifier object detection is the Haar-like features. These features, rather than using the intensity values of a pixel, use the change in contrast values between adjacent rectangular groups of pixels. The contrast variances between the pixel groups are used to determine relative light and dark areas. Two or three adjacent groups with a relative contrast variance form a Haar-like feature. Haar-like features, as shown in Figure 1 are used to detect an image. Haar features can easily be scaled by increasing or decreasing the size of the pixel group being examined. This allows features to be used to detect objects of various sizes [2].

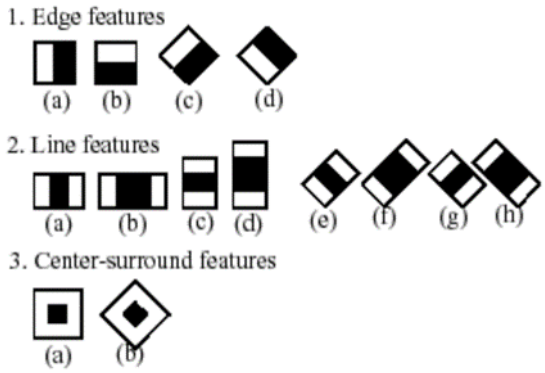

Figure 2

2. Limitations of our system

While we try to maintain the integrity of the examination, there are some technology and time limitations that we are meant to face during this project.

i. Inability to see beyond camera :-
That is we can only detect any sort of malpractice when it is in front of the camera, we won't be able to detect anything that goes behind the camera by the candidate party.

ii. Inability to detect any sort of gadget in use :-
While we can still detect the face of the user, our lack of knowledge or lack of time to gain the knowledge to detect earbuds or use of a phone that is not directly visible on camera.

iii. Difficulty in training models
It's important to remember that this algorithm requires a lot of positive images of faces and negative images of non-faces to train the classifier, similar to other machine learning models.

IV. CONCLUSION

To solve this problem which is on the rise since the start of the online examination due to pandemic, we believe that there is a need to create an online proctoring system that detects any sort of malpractice that occurs during the examination. This will not only eliminate the use of manual invigilating during the online exam but also provide an efficient way of preventing cheating in exams using Face Detection. The system may have its own flaws but we believe it's the right step forward to eliminate cheating in exams and protect its integrity.

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