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# The Suspicious Activity Detection System

## Abstract

The Suspicious activity detection system aims to serve a reliable online examination system which is based on strict online security and true candidate authentication. The main aim of the project is to detect the human who is cheating during the examination. Human face and human behavioral pattern play an important role in person identification. The proposed system aims to identify abnormal head motions, thus identifying copying. It will also identify a student moving out of his/her exam seat or swapping his position with another student or looking into another student's computer.

## Introduction

Online Examination has become very much popular in today's IT enabled world. It has replaced all the inconveniences of Offline Examination. But still now there is a big question regarding the security of online examination. Student's authentication during the online exam is a great problem. The major drawback of online examinations is that a candidate can easily use of any unauthorized methods. The system consists of the software developed running on the computer on which online examination is to be conducted. The Webcam is connected to the same computer. The software that is designed runs in the background along with the online examination running on the frontline. For the online examination, the computers used are placed at an appropriate distance from each other such that during normal situation, only one student (who is expected) comes in front of the webcam.

## Proposed System

In the proposed system, the student need to have a webcam equipped computer system and it should be placed in a way that his face can be clearly visible from the front view. As an initial checking process, the student will be asked to show the whole room in which the online exam is going to happen. The first part of proctoring is face detection. After detecting the face, video input , audio is also captured to detect whether there is any unwanted, specifically if there is anybody talking inside the room. There is a possibility of student user trying copy from a file with in the computer. Then all these are given as input to the heuristic based inference system. By analyzing all these inputs the inference system is deciding whether there is any malpractice or not.

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## Literature Survey

Literature survey provided us various papers and technique which will be useful for development of the project. These papers have used various image processing techniques for face detection and face tracking which can be explained as follows: Heuristic-based Automatic Online Proctoring System[1] 2015 IEEE 15th International Conference on Advanced Learning Technologies

This paper proposes a novel multi-modal method for automatic online proctoring using a combination of image processing, audio processing and pc monitoring techniques. In the proposed system the remote proctor only has to inspect the examination room. The proposed system based on Heuristic based automatic online proctoring combining image processing ,audio processing and pc monitoring techniques that removes the necessity to have a remote proctor throughout the examination to control cheating.

Automated Video Surveillance to Detect Suspicious Human Activity[2]International Journal of Emerging Technologies in Computational and Applied Sciences (IJETCAS) The proposed system aims to identify abnormal head motions, thereby prohibiting copying. It will also identify a student moving out of his place or swapping his position with another student or looking into another student's computer . We aim to develop a system that will identify the students who indulge in malpractices/suspicious activities during the course of an online examination. The system automatically detects suspicious activities and alerts administration.

## Algorithm

The Viola-Jones algorithm typically gives multiple detections, a post-processing steps. Viola-Jones algorithm, the first ever real-time face detection system. There are three ingredients working in concert to enable a fast and accurate detection: the integral image for feature computation, Adaboost for feature. The Viola-Jones algorithm typically gives multiple detections, a post- processing step.[2]

## Conclusion

With the help of this application examiner will detect the cheating behavior of the students during examination. This system will also alarm the cheating operations detected so that student will be aware of an activity. The Suspicious Activity Detection system would require less resources for it to work as expected because of the motion detection. System has advantage over the other applications as it doesn't involve the use of any existing database for suspicious activity detection. System is affordable and convenient and ensures more security.

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