**Synopsis on “***Utilization of Computer Vision techniques of AI for the Attendance Management System in online Sessions”* **for Project**

1. **Name / Title of the Project :**

Utilization of Computer Vision techniques of AI for the Attendance Management System in online Sessions

**2. Statement about the Problem**

With the advancement of technology a lot of progress has been achieved to expedite humans for accomplishing their tasks on online mode. The taking of online sessions, classes or meets is one of such tasks and so the online management of attendance. Keeping the need of the management of attendance of all the types of online sessions and meets, the paper is presented here based on the face recognition system as a component of computer vision technique. In this paper we have utilized the face recognition system as a tool to maintain the record of attendance as the human face could be taken as one of the natural traits that can be identified uniquely as an individual. For this purpose, a face database is created to pump data into the recognizer algorithm. Then, during the attendance taking session, faces are compared against the database to seek for identity. Again, when an individual is identified, its attendance would be taken down automatically by saving the necessary information into the excel sheet. Then, at the end of the session, the excel sheet containing the attendance information regarding all individuals is sent to the respective faculty or organizer through whatsApp as well as to the individual intimating him/her about the details of the login and logout time of the entire session. In this way an efficient and effective attendance management is done as all the details are sent to the organizer through a message which leads to sending of a secure and confirmed report by removing the ambiguities existing in the current attendance management methodologies.

1. **Why is the particular topic chosen?**

With the advancement of technology a lot of progress has been achieved to expedite humans for accomplishing their tasks on online mode. The taking of online sessions, classes or meets is one of such tasks and so the online management of attendance. Keeping the need of the management of attendance of all the types of online sessions and meets, the paper is presented here based on the face recognition system as a component of computer vision technique.

**4. Objective and scope of the project**

Computer vision is an area of Artificial Intelligence in which the software systems are designed to perceive the world visually through cameras, video and images etc. Of course, computers don’t have biological eyes that work the way ours do but they are capable of capturing, processing and recognizing images either from a live camera feed or from digital photographs or videos. This ability of capturing and processing images is the key in which we have utilized the content organization feature of computer vision and used it for taking attendance through a face recognition system in this paper. In the facial recognition process the method begins with an application for a camera installed or any of the compatible devices through which it is to be utilized. Then an application is created where one can use computer vision and a deep neural network in order to find a perspective face within a stream. Here the feature of computer vision utilized for detecting faces is an image captured aq1by the camera.

**5. Methodology (including a summary of the project)**

Design of Attendance System Based on Face Recognition the system consists of four parts: camera, recognize, csv and excel updating application and WhatsApp message. The entire system is designed with the obtained face information and can be compared with the students face information, and the corresponding attendance records with time/duration can be generated according to the established rules.

**6. Hardware & Software to be used**

**Hardware Requirement**

* PC with core i5 processor
* 8 GB ram or above
* 500 GB hard disk or above
* 2 GB graphic card or above

**Software Requirement**

* Windows 11
* Python 3.7
* Google collab
* MS Excel
* MS Word

**7. Testing Technologies used**

HTML and CSS - frontend

Python: -

OpenCV for taking images and face recognition

CSV, NumPy, Pandas, datetime etc. for other purposes

Flask Framework

**8. What contribution would the project make?**

Attendance system development background in the initial attendance system was based on manual attendance and mechanical punching. The collection of attendance data not only wastes a lot of manpower, but also easily produces false or false data. With the development of information technology, time and attendance systems based on bar codes, IC cards, proximity cards and fingerprints have emerged. Most of these time and attendance systems are based on computers to implement attendance management for employees.

**9. His / her willingness to guide.**