Attendance System

INNOVATION LAB
PROJECT

Done by: Rizwan Khan

ATTENDANCE SYSTEM

Topic of the Project

The topic of this project is broadly related to the computer science, with a special focus on the computer vision and android development. It is also closely connected with the object detection using the powerful model of SSD. The topic of the project is very trending these days and is new to the area of computer science and has remained much unexplored.

Just recently, because of the **HIKVISION (a company)** launch the counting of the people by counting the head, has introduced its most advance and powerful project. This project is going to use in crowded area's like malls, airports, railway stations, in parties etc. This gives the new opportunity to the industrial area and provide the huge success.

The deep study of the project is going through the steps of harrcascade, SSD models, up to the GIAN. But there is a very vast area to explore so the opportunity to miss something is increasing day by day. The research done in this field is not very limited so, because of this the possibility of making the project more useful for centuries by introducing the new tech will increase.

The title of the undergraduate project

The approved title of this project is viz. "**Attendance System**".

The Scope and coverage of the project

1). The scope and coverage of this study is broadly consisting of following aspect.

- First step toward the computer vision (Project) is to learn the **VIOLA JONES Algorithm and YOLO Algorithm.**
- Training the Harrcascade model for the Face Detection and Eye Detection ultimately for the head.
- Moving towards the next step is SSD models.
- The importance of SSD concept.
- Difficult part of the project is to train the SSD model for the detection of the head.
- Mechanics of railing(rolling) the camera at the sealing (For detecting the total no. of heads).

2). This is for the heads counts. Now, for how to take name and roll no. of the student and verify the student.

- Using the Android studio, to create the firebase.
- Only one student login using the one ip address, identify using the face recognition.
- Give roll no. and the name using the app (Automatically get using the face recognition).
- Store the data on the server of the college.
- Cross check with the app and camera (locks the position of the student in class using seat no.).

3). This is for the taking roll no. and name. Now, to create the digital framework to show the position of the student in the class using seat number.

- Create a webpage with the use of web development tools.
- Create a framework (graphical UI).
- To show the position of the student in the class.
- Completing the process by showing total students with roll no. and the name with the exact sitting location in the class.
- Here you go, you all set to go into the new world of the tech by using the advance attendance system.

Objective of the study

- To identify and understand the creative and innovative role by which Attendance taking is so easy, it saves a lot of time and make study much more interactive.
- It is further interesting to note that how this solution sorts out a very vast problem of fake attendance (student who are not in the class).
- The role of my system is to create a good atmosphere in the class and provide more interaction between teacher and students.
- To identify the importance of the SSD models and viola jones algorithm provide a very interesting topic to explore.
- To find out the different way to represent and use of the OPENCV and Computer Vision.
- Based on this model defining the unlimited and broad area to explore.
- Defining the no boundaries of the Computer Vision.

Material and Method

- The project work is conduct at the IIT Patna.
- Use of different software and methods.
- Some important software used are Anaconda, Android Studio etc.
- SSD method and Harcascade methods are important to understand.

The sources of data

- Udemy course of the Computer Vision.
- Stack overflow.
- GitHub.
- Python docs.
- Udemy course of AI, and Data Science and Computer Vision.

Status of the project

- Project completed.
- Completed on 24 April 2019.