

# AUTOMATIC ATTENDANCE SYSTEM USING FACE RECOGNIZATION

**Aim:-** To create a smart attendance system using raspberry Pi ,python, OpenCV google spreadsheets and deep learning.

## ABSTRACT:-

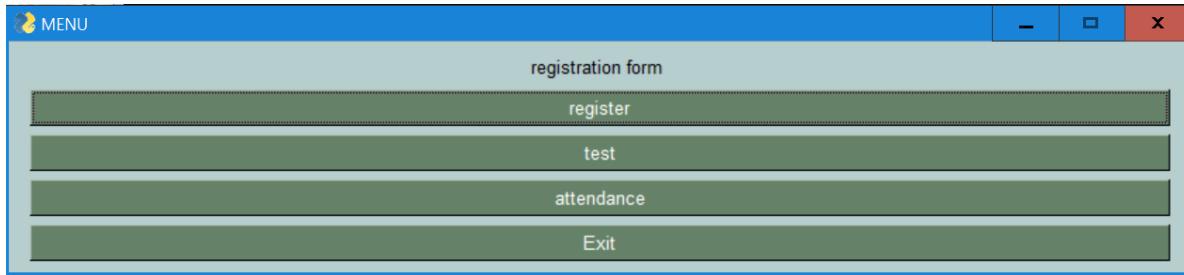
- This project mainly deals the application of facial recognition to use it in the field of attendance in the colleges, entry gate surveillance and the seminar halls.
- For this mainly we need the dataset i.e. set of entries for that class or the room.
- We have to build a deep neural network with that faces to recognize the each and every person with accuracy this was done by deep learning using python.
- After that preprocess the faces in dataset with this DNN and store as output folder for future reference.
- When the camera is initialized in the program with OpenCV for attendance the program captures the face convert into blob image and then it go for checking in the dataset for the person credentials.
- Once the person is found then it draws the rectangle box on the face and shows the Name, Roll Number and the accuracy also and it updates google sheets with the date and time also and gives us a alert for next person.
- All the registration ,testing and main attendance program are induced into a UI file for easy navigation among these and not to got to program every time we create a executable file as batch file.
- When we deploy this in a raspberry pi with windows or any os we can get the attendance from anywhere.

## APPARATUS:-

- Raspberry pi r3/esp32
- Camera (rasp/esp32)
- Touchscreen Led display or monitor
- 5v power supply
- Connecting wires
- Keyboard

## Procedure:-

- When we open a batch file it prompts as



This MENU bar has four options

### A) register

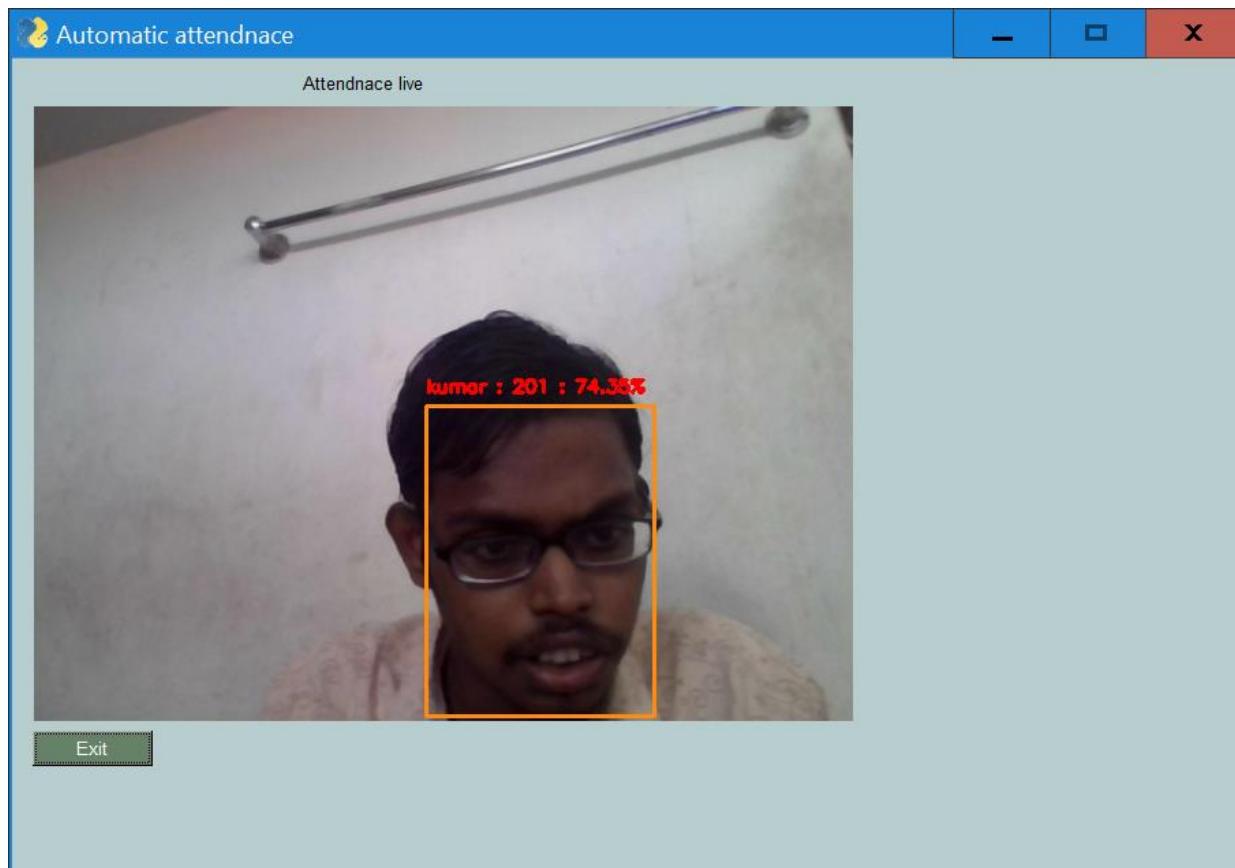
- It allows users to register themselves for the class or entry gate .
- When it opens it prompts for the NAME and ROLNUMBER after giving the input to it then the OpenCV integrates and takes the 30 photos of the person and preprocess it and adds to the data.

### B) test

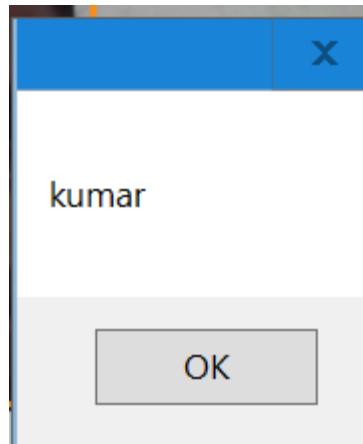
- This button makes users to check weather their name is correctly identify by the system or not and also helps in finding accuracy.

### C) attendance

- This is the main part of the program it takes the live face and checks for the person.
- When it opens it gives the live face feed



Once it updates the attendance in the sheet it shows name what we register as



And it updates in the gsheets like

F17	A	B	C	D	E	F	G	H	I	J	K	L	M
1	kumar	201	11/30/2021	15:50:07									
2													
3													
4													
5													

- So by this sheets we can access the attendance anywhere and anytime.

#### D) exit

- It terminates the program.

#### Advantages:

- It is used for a contact less attendance system in this pandemic time.
- It helps not to take every time attendance which is very boaring.
- The attendance is accessible at any time .
- The attendance is fast.

#### Limitations :-

- For a daily attendance system the spread sheet need to be updated.
- May be machine will confuse and enter a wrong person in some cases if the machine daily reads that face after some time the accuracy increases and this fault didn't occur.
- Machine will heat up for a long time usage so we has to fix a schedule on and off of program.
- Network issues may lag to update in sheets.

### **Applications:-**

- It can be used for daily attendance system in colleges , workplaces etc.
- It can be implanted as security camera and monitor from remote pc .
- With some modifications we can implant in websites for exam invigilation.
- It can be used in cc camera and automatic attendance in workplaces and face detection in crowd.

### **Resource :-**

- The code is uploaded in GITHUB repository the link for this program is [here](#).
- Some files are used in the program (DNN) the googledrive link is [here](#).
- To check the prototype of project [check here](#).

### **References :-**

- [DNN Neural Network | A Quick Glance of DNN Neural Network - Examples \(educba.com\)](#)
- [Connect Google Sheets With Python » Scripts for Marketers](#)
- [PySimpleGUI: The Simple Way to Create a GUI With Python – Real Python](#)
- [OpenCV Functions | OpenCV For Computer Vision \(analyticsvidhya.com\)](#)

- [Kalyan-Koppula/Face-recognition-based-attendance-system: Python implementation of simple face recognition based attendance system using face\\_recognition library. \(github.com\)](#)