ASSIGNMENT – 1

LivWize is a smart home solution is working on a product related to real-time employee monitoring system using networks of the CCTV camera. Target is to build a backend detection, recognition and tracking algorithm to keep tracking the employee throughout his 9 hours in the office and help in evaluating the efficiency and the productivity of the employees which can, in turn, prove to be a good analytical tool for the management of any corporate organisation.

You have to implement the part of the above described project which are explained in the following steps:

1. Detection of the Faces in a frame with minimal false detection using haar cascade
2. Recognize the face of a person using
    - HOG features,
    - LBP features,
    - GABOR features
    - and ORB features
    - with SVM as a classifier
3. The recognition framework should be intelligent enough to tackle the occlusion till quarter and semi portion. If it the occlusion works till half face then it would be highly appreciable.
4. Keep the track of the persons came in front of the camera with time stamping and create the CSV file of the same. This algorithm you have to think how you will keep track of the same person with time and keep saving the data in the csv file and keep n mind there should be separate columns or sheet for a separate person or you can have a separate file for each person that all is up to you.

5. The samples capture script and training script should be created in the following manner:
    - As soon as you run the training script, the code should prompt to enter the name of the person to be trained. That person name folder should be created automatically in the computer in the specified folder and samples will be saved there automatically. So no manual folder creation is allowed. ***Make use of os module**

    - And now while doing the training try and retrieve the number of folders and the images inside the folders and do the automated training using loops and at last apply the svm on the training dataset. ***Make use of os module**

    - Save the model and then use it in your final algorithm of the project.

Now the stipend criteria:

- Completion of project till the point-3 mentioned above is the minimum criteria to obtain the certificate of this project module.
- Point 4 and 5 are important needs to be handled with concentration, if till 5^{th} steps all the said points are covered in a **100 %** similar fashion within the alloted time then the student will be rewarded with a stipend of **500rs** and a certificate
- If point 4 and 5 are completed but if not within the alloted time the students will be given the certificate of the project with no reward.
- Partial fullfillment of the pont 4 and 5 will also be considerd for the certificate but that will purely be based on the approach of the project with algorithm efficency.

*Deadline to submit the project is **30^{th} June 2019** before midnight on email id **vdurrani@aedifico.org** , no extension will be entertained.