Test Question (Machine Learning Engineer)

** Last date of answer submission : 13th October 2019 (11.59am Night)

** Attach your code to the link provided in the email for questions 1,2 and 3.
** Attach your answer in PDF format to the link provided in the email for question 4,5 and 6.

Language :

Python, MATLAB (If you prefer python then use “virtualenv” **do not use** conda or pipenv)

Library :

you can use any of these libraries: Tensorflow / Pytorch / caffe2

**Given Video For Test : TEST.mp4 (Provided in the email)

QUESTIONS

1. Using MobileNet-SSD, find how many people exist in each frame of the given video. Print the total number of persons for each frame. Draw the bounding box on every person and save it in a different video. (Attach your code to your submission form)

2. Find the features from the last feature layer of Resnet-50 or MobileNet-SSD for human class and plot it realtime for each frame in the given video. (Attach your code to your submission form)

3. Train a classifier using all features against human class as mentioned in the above question (Quession : 2). Write a code that can take the person who exists in the given video as input and classify them using your trained classifier as 0 or 1 or 2 etc. (Attach your code to submission form)

4. Explore the repo (Link given below) and draw a flowchart on how face tracking is working here. *Also write down the algorithm of “kalman” tracker in **Pseudocode** format.*

   Link : https://github.com/Linzaer/Face-Track-Detect-Extract

5. Is euclidean distance enough for feature matching? If you think it is enough then write down 3 points on behalf of it. If you think it is not enough then explain why and write down 3 points against it.

6. How can we improve euclidean distance based matching without using any other algorithms..?