PROJECT PROPOSAL:

# FACE RECOGNITION AND TAGGING USING A CAMERA

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## I. Overview and motivation

Have you ever noticed that Facebook has developed an ability to recognize us in pictures as soon as we upload it? based on previous labelled data, nowadays Facebook can find our faces in a picture and tags us like magic. We all understand that the algorithm has been growing mature, based on previous data generated from users, the algorithm has been learning, then it can absolutely match each face and its name with 98% accuracy. Thus, in this project we will try to understand and make an algorithm as similar as Facebook's algorithm, furthermore we will add one more functionality, the camera feature that is not found in algorithm used by Facebook. Our algorithm is going to detect a face or image placed in front of a camera and make a person's name prediction.

This project may be applied in the future to solve the problem of attendance when organizing a conference, lecture, seminar by marking all the attendances of registered people from their faces, we do not need to call one by one.

from idea to implementation we have to go through some steps.

## II. Steps

1. conception:
    - collect data;
    - feed the model with data;
    - train our model based on that data.
2. test:
    - open the camera;
    - find a face or image in front of the camera;
    - analyze facial features;
    - compare against known faces;
    - make a prediction.

## III. Tools:

1. hardware:
    - laptop with Linux OS 64bits CPU for personal raisons
2. software:
    - Python 3.5;
    - OpenCV 3.2 with Python 3 bindings;
    - Dlib 19.9 with Python 3 bindings;
    - TensorFlow 1.5 for Python 3;
    - Keras 2 for Python 3;
    - PyCharm community Edition.

## IV. Skills needed

- Programming language(python);
- Familiar with Linux, TensorFlow, Keras and OpenCV;
- Machine learning, deep learning, CNNs, A little bit of Linux.

## V. Remarks

- Some of these tools might be changed as we will be working on the project;
- **No team** for this project, I will be working alone on it;
- This project **is not based on the previous or on-going project**, It is just an idea that came up recently in my mind for ML subject;
- In this project we will focus only on one face as sample.

## VI. Schedule and milestones

- Collect data and preparation (3 days, from May 21th-23d);
- Feed the model with data (1 week, from May 24th-31st);
- Train our model based on that data ( 1 week, from June 2nd-8th);

this is **detentive schedule**, so it might change depending on different

## VII. Link GitHub

- Account : kabulo.nday@gmail.com /orville92
- link : https://github.com/orville92/face_recagnition_camera_sinai