# TOOLS AND TECHNIQUES LAB ACTIVITY T1

Topic : Enhancing Gender and Age detection project using Tensorflow (Python)
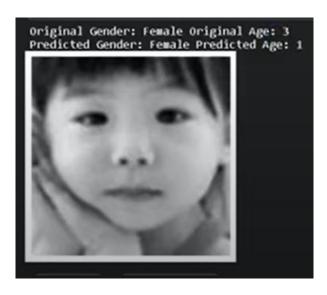
## TEAM MEMBERS

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# Gender & Age Detection Project Enhancement

The existing project URL : [Original Project Link](#)

The objective of the project is to detect gender and age using Image Classification and Regression.



# Enhancements on the above project :

## 1) *Image classification and Facial Emotion Detection* -

The python program will use CNN to classify the images with 7 different emotions and data set will be included from CNN network. The data we will use will consist of over 20,000 face images with annotations of age, gender. The images cover large variation in pose, facial expression, illumination, occlusion, resolution, etc. We will assimilate/combine this project which is already available in github to the above original project.

Reference Link - [Emotion Detection Project Link](#)

## 2) *Image classification and Face Mask Detection -*

The data set is collected from the internet and labeled manually with the help of a labeling module. It contains few images for training and testing. The objective of the project is to detect mask on the face with the help of an object detection module.

Reference Link - [Face Mask Detection Project Link](#)

## 3) *Image classification and Ethnicity Detection -*

Predict Race/Ethnicity Based on Sequence of Characters in the image by also inputting the image of the person in the python file and using ethnicolr-PypI python library file. It will merely categorize between Non-Hispanic Whites, Non-Hispanic Blacks, Asians, and Hispanics.

## 4) *Voice Assistant assimilation -*

It will reply back in text as well as VOICE using Translator, gTTs and PlaySound python libraries.

❖ It will reply to all details in voice including age, gender, name, Ethnicity.

❖ It will reply back with a message if the person is not wearing a mask then how important it is to wear a mask due to COVID with important guidelines provided by the government.

❖ It will reply with a random joke against the emotion of the person to try to make him neutral using Pyjoke pip library of python.

❖ It will reply back with same accent of English according to the race the person belongs.

* If the person is male it will reply back with male voice, else if the person is a female the project will reply back in a female voice.

## 5) *WEBCAM -*

Capturing Image from Webcam of the Desktop using OpenCV and matplotlib  libraries then renaming it to the required file which python will read in this program to make it compatible with correct results.

## 6) *PDF OUTPUT -*

All the details will be written in a PDF file with the image and all details of the person, and will be saved in the os for further reference so that he can maybe share with others or print out all the results that this program has predicted about him.