Object Detection Project

In this project you are asked to create programs to detect "winking" and the "silence" (shush) expression. In writing your programs you may use all the high level functionality of OpenCV, but you are not allowed to convert images into arrays of pixel values. The only cascade classifiers that can be used are those provided by OpenCV, as well as those available in the following link:

http://alereimondo.no-ip.org/OpenCV/34.

In both cases the input to the program is a folder containing images or a live video feed. The program displays each image, and marks each detected face with a distinct color.

Part I: Wink detection

Write an OpenCV program that can detect a winking face. You may want to build your program by changing the example program DetectWink.py.

Part II: Silence (shush) Detection

Write an OpenCV program that can detect a "shush" expression. (This is when a person requests silence by raising the index finger vertical to the lips.) You may want to build your program by changing the example program DetectShush.py.

What you need to submit

1. Python source code of your programs. (Please name them DetectWink.py and DetectShush.py.)

2. Documentation that explains your approach.

Evaluation

The live video performance of your programs will be tested on your own face, or, if you want, on someone else available during the demo.

In addition we will run your programs on test data and count:

A. Total number of correct faces detected.

B. Total number of incorrect faces detected.

If you submit everything as required, and on time, and your programs work correctly on live video, the two numbers A,B, are the only thing that will determine the grade. You should try to obtain a detector that maximizes A and minimizes B.