Face Recognition Demo: Part 1

Face recognition requires two fundamental tasks: Face Detection followed by Face Recognition. We first need to detect faces in an image. Then for a detected face, we can compare the face with a reference image. If the detected face is “similar” enough to the reference image, then we can declare them to be a match. In this first demo we will demonstrate how to Detect faces in the video stream of a camera.

1. Make sure a camera is connected to the USB port on the STEM-Kit.
2. On the STEM-Kit, open a command terminal window and change directory to demos

```
pi@raspberrypi:~ $ cd demos
pi@raspberrypi:~/demos $
```

3. Execute the demo script. After the command prompt [$] type the following:

```
:~/demos $ python module-2-demo-face-recognition.py
```

4. The script will launch a window with a video feed from the camera.
5. Point the camera at the following image to see if you can detect the face. You should see a green bounding box that identifies the location of the face as well as facial landmark points for the eyes, nose, and mouth.
6. Proceed to the next page for Part 2 of the demo.

Sample Image

Face Recognition Demo: Part 2

The second part of this demo will illustrate how to perform Face Recognition. This time we will need to specify a reference image. We also refer to the reference image as a target image.

You should already be logged into the STEM-Kit and in the demos directly from Part 1 of this demo.

1. This time, execute the demo script with the optional input argument (`--target_image`) and specify the name of the target image. We have included the target image in the demos folder which is the image from the person on the first page.

```
$ python module-2-demo-face-recognition.py --target_image target_image.png
```

Target image of same person
in sample image

2. After launching the script, point the camera at the image below and it should say No Match because we did not specify a target image of this face.
3. Now try pointing the camera at the image on the previous page to reveal the identity of the person in the image.
4. You can also try pointing the camera at yourself or at other images that contain faces and most of the time you should see a message that says “No Match” since they should not represent the person from the target image we supplied.
5. Exit the program, by selecting the `q` key on the keyboard.