**CS 6384.001 Computer Vision**

**Instructor: Prof. Haim Schweitzer**

**Programming Assignment 2**

Submitted By:

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**Approach for Question 1**

1. We first detect the number of faces in an image. If the number of faces is one, which is most likely for any random image, we proceed with the next step. Else, we train a different haar cascade classifier for face detection and use it to accurately detect faces in the image.
2. While searching for eyes, we narrow down our search area in a given face to 3/5 of the height of the face region
3. If the number of eyes detected is one, which is most likely for a wink image, we proceed with the next step. Else, we train a different haar cascade classifier for eye detection and use it to accurately detect eyes in the image.
4. Only images having one eye or two eyes detected are highlighted.
5. We are able to detect most of the cases where there is a wink and ignore cases where there is no wink.

**Approach for Question 2**

1. We use histogram equalization followed by the approach used in Question 1

**Running the Code**

1. Open terminal.
2. Go to the directory containing the python files.
3. Run the following commands:

> python3 part1.py old-images

> python3 part2.py new-images