WOC Report

Project Name - Phiz-X
Mentor's Name - Akshita Gupta.
Student's Name - Abhishek Seth.
Repo's Link- https://github.com/abs12seth/Phiz-X
Mentor's Repo's Link- https://github.com/akshitagupta15june/Phiz-X
Reference Link- https://github.com/akshitagupta15june/Face-X

Description :

My project Phiz-X was all about faces and learning images. Reading images and then detection and recognition of faces using various algorithms.

Face detection

Face recognition is basically the task of recognizing a person based on its facial image. For recognition of face first we need to detect faces from the image. For image reading and learning, I learnt Python OpenCV. Face detection has been done using Viola-Jones algorithm.
This algorithm consists of 4 steps:

- Selecting Haar-like features.
- Creating an integral image.
- Running AdaBoost training.
- Creating classifier cascades.

I implemented this algorithm using predefined models of algorithms in OpenCV Cascade Classifier. Snapchat filters are one of the applications done by face detection, implemented through a thug-life filter using this face detection code to get better hold on this face detection application.

Face Recognition

After the face detection extraction of face, cropping and resizing is required in the face recognition algorithm. In face recognition we are giving a dataset of input faces to the computer to detect its facial features and then using those facial features the computer gives us the output whether the face is user's or not. Upto now I only learned the LBPH algorithm of face recognition. Some basic ML was required to do this part which I learned.We create a model using predefined create LBPHFaceRecogniser.
Local Binary Pattern (LBP) is a simple yet very efficient texture operator which labels the pixels of an image by thresholding the neighborhood of each pixel and considers the result as a binary number. Using the LBP combined with histograms we can represent the face images with a simple data vector.

It has 4 main steps:

1. Collecting the Dataset
2. Applying the LBP Operations
3. Extracting the Histograms
4. Performing the Face Recognition

I collected a dataset of my face and then implemented the algorithm in such a way whenever I show it a face it checks and tells whether it is a user's or not.

I couldn't do all the algorithms in this time but, in the upcoming time I will surely implement other algorithms of face recognition. I will be in touch with my mentor. So, she can guide me further for other algorithms. The Reference link is given above for the real project.It was fun working on the project. As I worked for the first time on some project. I have learnt many new things during this project. I am looking forward to doing some more projects. After working on this project, I realized that the face and image part is fun.

Output Screenshots