Face Detection Software

ARTIFICIAL INTELLIGENCE LAB, CSE 418

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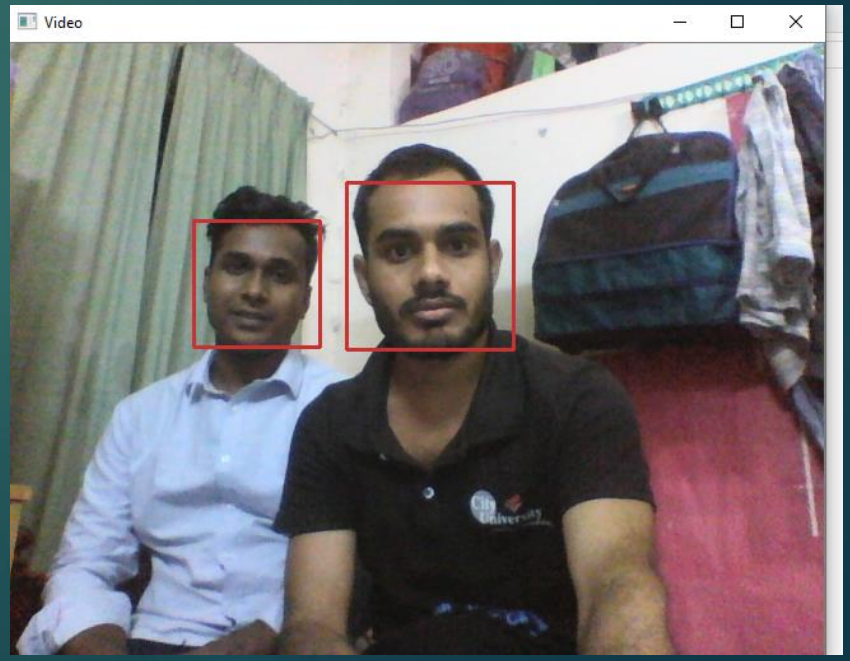
Objectives

- The objective of our project is to design software that can detect human faces on real time.

What is Face Detection?

- Face detection is a computer technology being used in a variety of applications that identifies human faces in digital images.
- It detects facial features and ignores anything else, such as buildings, trees and bodies.



Face detection and Recognition

- Face detection is a broader term than face recognition.
- Face detection just means that a system is able to identify that there is a human face present in an image or video or real time.
- Face detection has several applications, only one of which is facial recognition.

Why we chose Face Detection Project?

- • Compatible with Modern Era.
- • Not common in JAVA.
- • Basic programme for Recognition(Recognition is not possible without Detection).
- • Security Maintenance.

Methodology

Requirement tools:

- OpenCV
- Python IDLE
- Laptop(with web cam)

Methodology

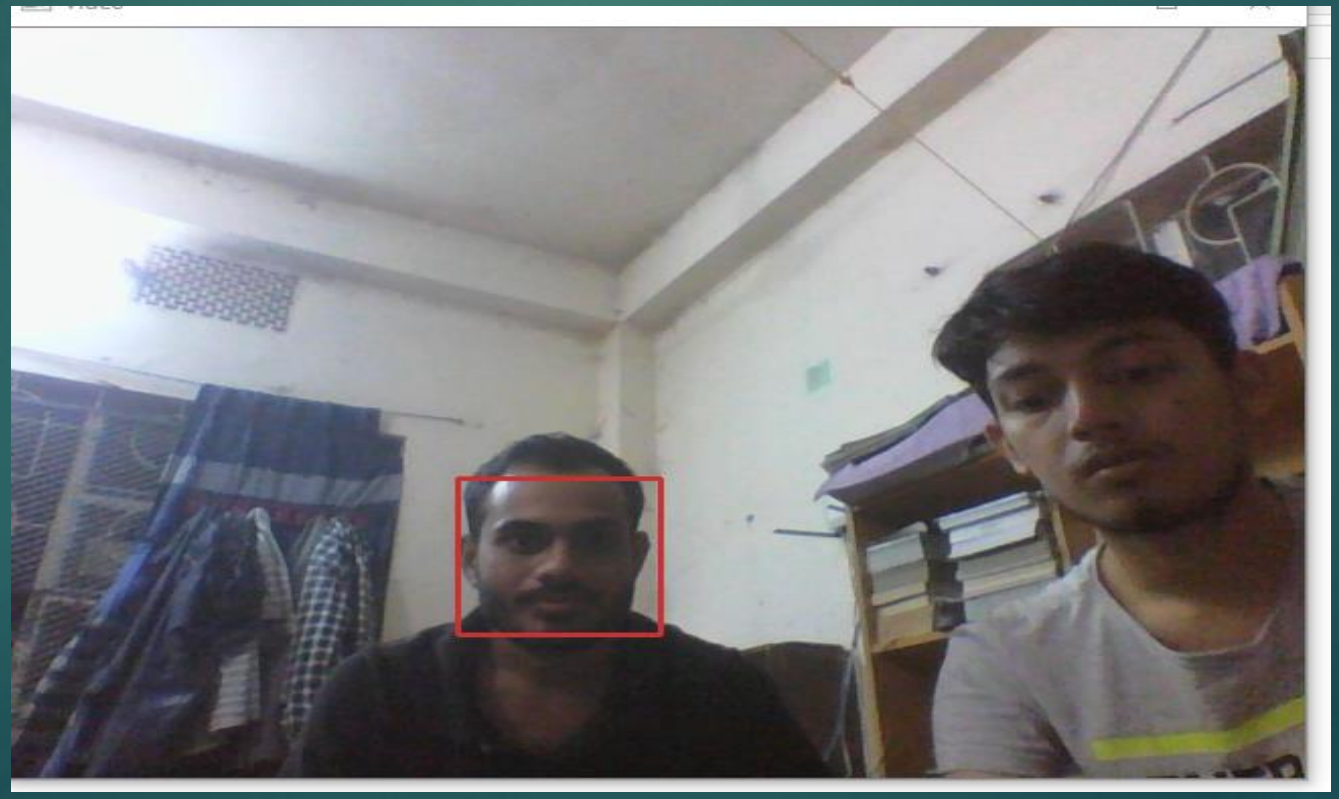
Face detection is performed by using classiers. A classier is essentially an algorithm that decides whether a given image is positive(face) or negative(not a face). A classier needs to be trained on thousands of images with and without faces.

Fortunately, OpenCV already have pre-trained face detection classiers, which can be used in our program.
The two classiers are:
Haar Classier and
Local Binary Pattern(LBP) classier.

In our project, we use the *haarcascade_frontalface*.

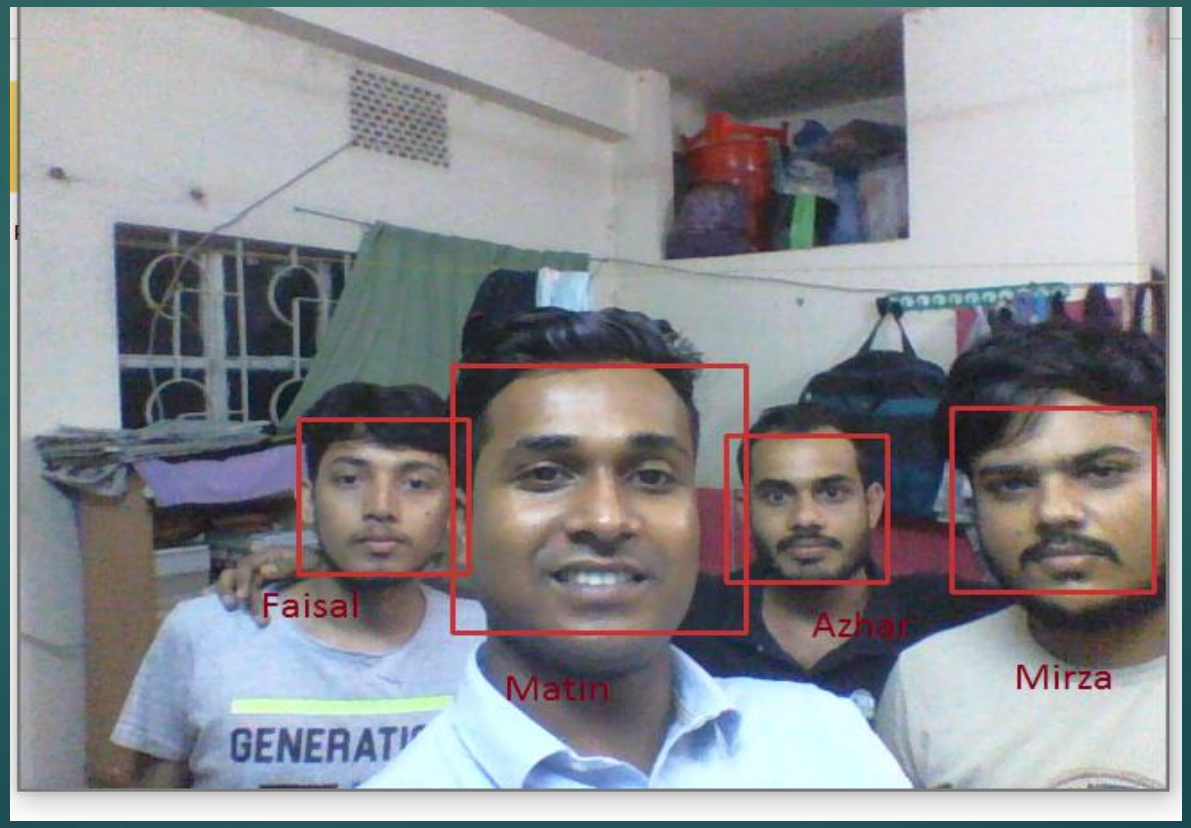
Limitation

- Our project cannot detect the faces accurately in low light.



Future Plan

- Our project can only detect the faces.Not find out the matched faces that stored in the dataset. So we will try to do that in future like this image.



Appendix

- https://thecodacus.com/opencv-python-face-detection/#.XSwrYD8zbDc
- https://en.wikipedia.org/wiki/Viola%E2%80%93Jones_object_detection_framework
- https://www.2mcctv.com/blog/2017_07_18-what-is-the-difference-between-face-detection-vs-face-recognition/