**Date:** 27 December, 2019

**Project Title:**

Face detection using computer vision

**Abstract**

Face detection is a computer vision technology that helps to locate/visualize human faces in digital images. This technique is a specific use case of [object detection technology](https://en.wikipedia.org/wiki/Object_detection) that deals with detecting instances of semantic objects of a certain class (such as humans, buildings or cars) in digital images and videos. With the advent of technology, face detection has gained a lot of importance especially in fields like photography, security, and marketing. It is the process in which algorithms are developed and trained to properly locate faces or objects (in object detection, a related system), in images. These can be in real time from a video camera or from photographs. An example where this technology is used are in airport security systems. In order to recognize a face, the camera software must first detect it and identify the features before making an identification. In this project, I implemented a system for locating faces in digital images. These are in JPEG format only. Before we continue, we must differentiate between face recognition and face detection. They are not the same, but one depends on the other. In this case face recognition needs face detection for making an identification to “recognize” a face. Face detection uses classifiers*,* which are algorithms that detects what is either a face(1) or not a face(0) in an image. Classifiers have been trained to detect faces using thousands to millions of images in order to get more accuracy. OpenCV uses two types of classifiers, LBP (Local Binary Pattern) and HaarCascades.