

Novelty of Project

## 1.) Dataset :-

I used random web images of people not wearing masks and then used landmark recognition to generate my own augmented dataset in which the same images were modified such that the people in them were now wearing masks. In addition, I also used various transformations like image flipping, scaling, rotation, etc. to avoid overfitting and further increase the size of my dataset.

## 2.) Methodology :-

The first step in mask detection is face recognition, for which I have employed SSD (single shot detector) model. After the face is detected, the next step is to use object detection to determine whether a mask is present on the person's face or not. For this purpose, I have created my own binary classifier based on the MobileNetV2 framework, which utilises different layers of Convolutional Neural Networks to be able to accurately distinguish b/w a masked and unmasked face. Along with the result of the prediction, its confidence score is also displayed to the user.



### 3.) Optimization of hyper parameters :-

After trying out various combinations of hyper parameters, I found that a good accuracy score was achieved in relatively less duration of time by setting the value of learning rate as 0.0001. I also found that the optimal no. of epochs came out to be 20. Any further increase in the no. of epochs lead to increase in error and corresponding decrease in accuracy due to overfitting.