



Face Mask Detection using Opencv

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ABSTRACT

Coronavirus pandemic has quickly impacted our everyday life disturbing the world exchange and developments. These virus transmitted through droplets from one person to another person easily. In order to prevent this spreading of virus almost all of us need to wear a mask. Wearing a defensive facial covering has turned into another ordinary. Sooner rather than later, numerous public specialist co-ops will request that the clients wear veils accurately to profit of their administrations. Therefore, facial covering identification has turned into a pivotal undertaking to help worldwide society...

So our web application developed by using the methods open cv and tensor flow. Opencv which detects faces of a person and tensor flow detects whether the person is wearing a mask or not. This methods help us to detect whether the particular person is wearing a mask or not. If the person is not wearing a mask then the system finds out the particular person details from the database and then it sends a warning text message to the Admin of the institute who is monitoring whether the person wearing the mask or not.

1. INTRODUCTION

Covid 19 affects Many people in different ways. Most covid 19 affected people will develop mild symptoms to moderate illness and recover without hospitalization. The covid 19 pandemic severe affect on the social and economic trade around the world these pandemic disturbed the studies of the Young people are particularly vulnerable to the disruptions the pandemic has caused, and many are now at risk of being left behind in economic, education moments and health and wellbeing during a crucial stage of their life were develop By using mask we can protect ourself from virus. The development of an solution to detect if the person is wearing a face mask and allow their entry would be great help to the society.

We cannot keep an eye on every person whether they are wearing a mask or not while they are coming to work. Therefore the need of face mask detection takes place. In this model we are using the Convolutional Neural Network. It is a deep neural network model used for analyzing any visual imagery. It takes the image data as input, captures all the data, and send to the layers of neurons. It has a many layer, which processes which gives the output that is the prediction output of the image.

In this project we are maintaining dataset. The dataset consists of the attributes like Name of the person, image of the person .

In our web application we are using Opencv. It is an open-source library .which is primarily used for

computer vision Applications that can be used to perform tasks like face detection, objection tracking, landmark detection, and much more. Opencv uses CNN algorithm to detect the image and analyze the visualary.

Tensorflow is used to detect whether the person wearing a mask or not. Here tensor flow uses DNN algorithm. If the person is detected without mask in the dataset then the system sends warning text message to the admin who is monitoring in the system to take safety measures.

EXISTING SYSTEM

Face mask detection is done by using the approach Convolutional Neural Network. Previously it can be done by using SVM, OpenCV, Naïve Bays .Convolutional neural network which is used to analyze the image. It takes image as input and then it assign importance to various object present in image to different one from another face mask detection system is capable to load the data both with and without mask.

2. PROPOSED SYSTEM

We use OpenCv to get the faces and tensor flow to search the mask on the person face. Here OpenCv uses the CNN model to detect the face of the person in the live stream video for to improve the accuracy and efficiency of the detection we use ImageNet CNN .CNN is used for analysing the image into subparts and gets the charecteristics of the person in the live video stream. Tensor flow uses DNN model to detect whether person wearing a mask or not .Next once again opencv model is used to detect the person. Tensorflow model is used to detect the person who is not wearing a face mask. If the identified person's details are in the dataset, then it will a sent a text message to the operator of this web application that they are not wearing a mask and if the person details are not identified then the person image is stored in the dataset.

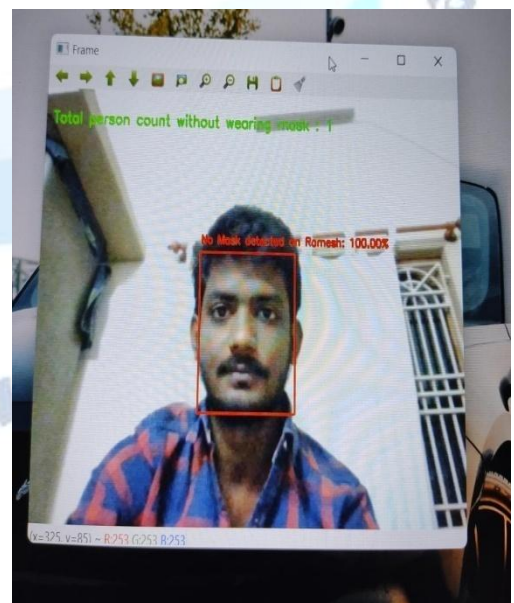
In this system the loaded dataset is first trained and after that the data is tested. The webcam is involved for live streaming video. If the person is not wearing mask and their details are not in the database, then the captured image is stored. By implementing the web application and by using the image net CNN we can get the results more accurately and efficiently.

3. IMPLEMENTATION

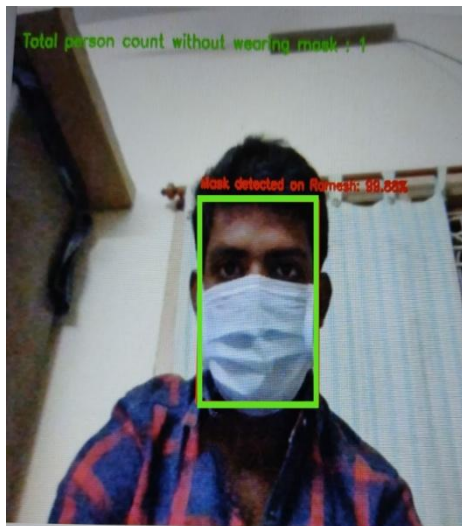
(modules)

Let us visualize the total number of images in our data set of with and without mask. In the data agumentation the face that is detected from the live video stream. The detected face will rotate and flig in our data set. After that we split our data into two types that is training data and testing data. The training data set which consists of images of with and without mask ,By using CNN model the image is trained and then it will test with faces whether the faces contain mask or not. CNN model consists of various models by using this we build our model sequentially. Now we are training our model and fitting our image in the training set to our model. The face of the person is labelled with the rectangular bounded boxes .

If the face of person is detected with mask then a green color rectangular box otherwise red color rectangular box is displayed on the image of person .Green color box indicates the person with mask otherwise we represent withmask as 1 and without mask as 0. We are using open computer vision libraries to run number of loop to use web Cam. Our web system able to detect both the categories of with and with out mask of persons by bounding a box over the face of a person.



Without Mask



With Mask

4. CONCLUSION

By using OpenCV, Tensorflow we are able to detect whether the person wearing a mask or not. By wearing mask we can prevent ourself and others from this virus.

Wearing a mask and allowing the person to this society is a great help and by wearing mask we can protect people from these virus transmission through the face mask detection.

5. FUTURE SCOPE FOR FURTHER DEVELOPMENT

Our present web application gives good results in group of person faces contain with and without mask. For detection of some people face masks, it gives good results. Our web application easily works on desktop just with live streaming video which was scrolled web cam.

It does not need any other third parties. It can easily run on web browser. Further, we will work to implement these web applications to detect large number of people who were detected without a mask. We also implement to give accurate result and fast the process of detection. We also work to import these web applications in public places using ID details as dataset in order to import Challan on the people who are not wearing the face mask.

Conflict of interest statement

Authors declare that they do not have any conflict of interest.

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