# FACE MASK DETECTION

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Course title

Data Analytics

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# FACE MASK DETECTION

## Project Theme:

This Project aims to build a system which identify a person wearing a face mask or not.

## Introduction:

In today's scenario, a large fraction of the world's population is suffering due to COVID-19. In this pandemic it's important to identify individuals who are carrying the virus and who aren't before they are allowed to enter into a public places where a crowd is gathered for a cause. It's now a global individual protocol to wear a face mask covering nose and mouth when we step out of our doors. The scientific research proves, when a person follow these protocols the spread of this contagion can be controlled. One of the toughest jobs now in the worlds is a greeter and security person who is in the entrance of a large retail store, shopping malls or a public building who insist people to wear face mask before entering the premises. Our project will help to take a decision of allowing an individual into the premises by doing the protocol checks automatically.

## Previous research:

The most popular algorithm used in face detection is Viola-Jones algorithm proposed by researchers and the algorithm is named after them. Though the algorithm is more powerful it's slow in detecting real-time. Given an image (this algorithm works on grayscale image), the algorithm looks at many smaller sub regions and tries to find a face by looking for specific features in each sub region. It needs to check many different positions and scales because an image can contain many faces of various sizes. Viola and Jones used Haar-like features to detect faces in this algorithm.

## Problems in the Field:

✓ The current system get confused if a person is covering his nose and face by his hand or by wearing long collared shirt around his face

✓ When a person wear a mask which start covering from below of his eyes till neck the present system fails to consider the person with masks rather it says as he is not following the protocol

## Project Goals:

The goal of the research is to build this detection system by using the technologies like Tensor Flow, OpenCV libraries and Python Tensor Flow is an open library used for deep learning to build each layer in a convolution neural network. It offers multiple levels of abstraction to allow the user to choose the right features to determine the person. OpenCV library mainly aimed at real-time computer vision. I will learn to implement our facial recognition part using this library. Python is an interpreted, high-level, general-purpose programming language. This language constructs and object-oriented approach aim to help programmers write clear, logical code for small and large-scale project so we may use this to write our face recognition.

## Outcome:

The system can be installed in the entrance of premises where there is high human traffic and also social distancing is not possible, which will filter the individuals entering in is wearing face masks mask.
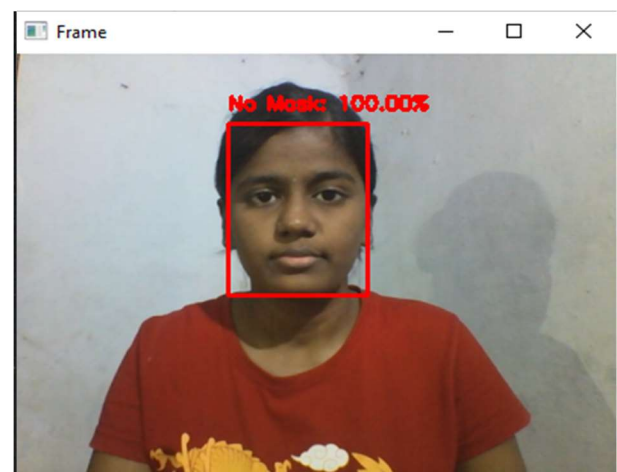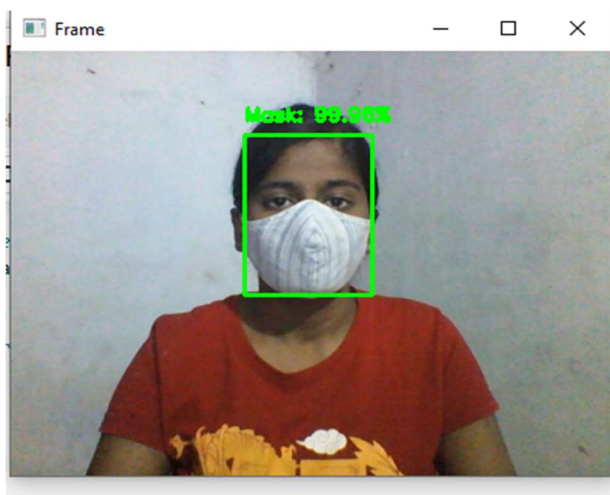
## Conclusion:

The mask detection reduce the rate of the spread. This project will help in the country like US, UK and especially country like India where the density of population is very high to control the pandemic.

## Reference:

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2. P. Viola and M. J. Jones, "Robust real-time face detection," International Journal of Computer Vision, vol. 57, no. 2, pp. 137–154, 2004.View at: Publisher Site | Google Scholar