

# Real-Time Face Mask Detection

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**Abstract:** *After the breakout of the worldwide pandemic COVID-19, there arises a severe need of protection mechanisms, face mask being the primary one. According to the World Health Organization, the corona virus COVID-19 pandemic is causing a global health epidemic, and the most successful safety measure is wearing a face mask in public places. Convolutional Neural Networks (CNNs) have developed themselves as a dominant class of image recognition models. The aim of this project is to use machine learning capabilities for detecting and recognize face masks worn by people in any given video or picture or in real time. This project develops a real-time, GUI-based automatic Face detection and recognition system. It can be used as an entry management device by registering an organization's employees or students with their faces, and then recognizing individuals when they approach or leave the premises by recording their photographs with faces. The proposed methodology makes uses of Principal Component Analysis (PCA), Face Net, LBPH Face detection Algorithm and HAAR Cascade Algorithm. Based on the performance and accuracy of our model, the result of the binary classifier will be indicated showing a green rectangle superimposed around the section of the face indicating that the person at the camera is wearing a mask, or a red rectangle indicating that the person on camera is not wearing a mask along with face identification of the person. Once the Algorithm Identified the face it will send a text message to the recognized person to wear a mask and save the record.*

**Keywords:** HAAR Cascade, Neural networks, LBPH Algorithm.

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