Face mask detection using machine learning

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*Abstract:*It is not good to compare the current state of the world before the introduction of the coronavirus. People are still afraid of the coronavirus. In this case, the government urged people to wear masks. If required, some people are not ready to wear a mask. In this case, you can use this model to identify who does not use it. Most reports show that wearing a mask can reduce the risk of developing sewers. Using MobileNetV2, through thorough education, identify whether a person is wearing a mask.

Introduction: At present, the Covid-19 or corona virus is a name of terror to the human race. The only way to survive from this virus is awareness. And to raise this awareness, the government of every country and who (World Health Organization) has made the mask mandatory. Therefore, keeping this plan in mind, the main objective of the project is to bring every person under the control of masks by using Artificial Intelligent and Deep learning based on Machine learning. The WHO gave few guidelines to prevent the spread of novel corona virus. There is no proper vaccine yet to prevent this virus attack. Coronavirus causes traumatic respiratory depression. It leads to the heart, liver, kidneys, and death. Coronavirus is most affected by this disease vulnerable experience to recover without the need for adjustments or abnormal dyspnea treatment. For all these reasons, you need to cover your face with a mask. The principle of wearing a mask is motivation to prevent the spread of pearl infections that occur when talking, smoothing, or hacking. WHO (World Health Organization) encourages different countries to settle wear a mask with open space. With the help of machine learning, the following is shown appearance and appearance can be detected. This section describes the identification of face mask models based on PC vision and deep learning. Recommendation you can connect the model to a surveillance camera to stop the COVID-19 infection. Identify people who are not wearing masks. The model is a combination of deep learning and traditional thematic machine

learning techniques such as keras, openCV and tensorFlow. Most importantly, everyone must abide by the rules to protect themselves from the new coronavirus the open space makes it predictable. Through the transfer learning model, the author attempts to automate the process. Test wearing a mask. The mo model del also uses state-of-the-art in-depth tweets prepared in advance. Model learning, Inception V3. Thewas developed and tested on the Reproducible Coverage Data Set (SMFD)[1].The author publishes his own dataset and identifies it as MAFA. Different aspects of the data set the direction and extent of the resource, as well as the closure of the mouth on one side of each face. Used LLE-CNN mark the mask [2]. Covid-19 spread rapidly around the world, triggering a global health crisis. Recognize masked faces use classic and deep machine learning. And with the help of the data set, train the model [3].In this article, the author points out that COVID-19 is harmful to the environment. Here the author used Face mask and deep learning technology to detect masked faces and the wrong way to wear them mask [4].In this article, the author uses a basic machine learning package. They are keras, tenserflow, Psychitlern and openCV. Then use the trivial spastic neural network model to detect the presence of the mask ineffective over-adjustment [5].

Keywords: Open-CV,Mask detection, Artificial Intelligence, Covid-19, Machine learning, Deep learning,MobilenetV2.

Several Research Methodology: In today's environment, it is very dangerous to go out without a mask. Even the government passed the strict rule is that all citizens must wear masks when leaving. But some people don't follow the rules When they are in a crowded place like market, hospital, shop and many other place. They cannot be identified. We use faces to identify these people Mask detection who have no mask in his/her. When dealing with existing models, using existing models for discovery is not more effective. Compared with other models, it requires more images and relatively more parameters. When mask detection found without mask people fast mask detection is needed to stop them, but the image is likely to be slightly tilted or distorted. At this time, the model is usually sometimes people have a some problem with image classification.

Here it is recommended to transfer photos/videos around the center of the system how to identify the person wearing the face masking with deep learning calculations using PC vision and OpenCV and TensorFlow Keras and Python libraries.

Source information: Most images have been enhanced by OpenCV. The image format is called a "mask". There is also "no mask". Available images vary in size and resolution, and may be inactive machines (cameras) from different sources or from different resolutions.

Data pre-processing: We applied the preprocessing plan cited below to convert it to all original input images.In a definite way, it can be processed into a neural network model.

1. Resize the image (480 x 640).

2. Place color calculations (RGB) in the transition.

3. Use standard averaging Python jobs for image scaling/standardization when loading.

4. The image is cropped in the center, and the pixel is estimated to be 224 x 224 x 3.

5. Finally turn them into tennis balls.

Mask recognition program:

Step 1: Enter the mask data set

Step 2: Use the Python library to train the dataset

Step 3: Reorganize the data set on disk

Step 4: Load the data set from disk

Step 5: Recognize the face from the image/video sequence

Step6: Determine if you have a mask

Step 7: Output the result

Figure:- Detecting of Face Mask

Comparative Study Between model: By combining all the elements of our architecture, we continue to get the correct mask display system. Recognizing people using mask image / video transmission using the Python library and utilizing PC vision and deep learning calculations recognizes system performance and masks of multiple facial images from different angles. It is the result of the possibility of doing. Therefore, this challenge creates an opportunity for new mask detection algorithms that can detect covered buttocks with greater accuracy and accuracy.

Conclusion: Due to the active development of technology and new trends, we have experienced mask inventors who can contribute to the public health sector. Mobilenet is included in the design as the backbone and can be used to distinguish between the most powerful highlights in high-guess and low-guess situations. Use the procedure to adjust and prepare for a relatively low face detection load. Very large dataset.

Use OpenCV, TensorFlow, Keras, Python, CNN to determine if someone is wearing a mask. These models were tested by image and continuous video transmission.

This particular model can be used for edge testing. In addition, the proposed strategy achieved complex results with public mask datasets. Advances in mask recognition technology have made it possible to identify whether or not a person is wearing a mask and allow them to enter the room, which is of great help to society. Model optimization is an ongoing process to achieve model accuracy. This particular model can be used for edge analysis purposes.

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