**Deep Learning-based Face Mask Detection Using YoloV5**

Ongoing Corona virus disease 2019 (Covid19) pandemic, face mask wearing in public could reduce number of COVID-19 infected by minimizing the release of respiratory droplet from infected people. This paper is to study an effective method for face mask detection using a deep learning model created by "Yolov5". Comparative model developed with a different number of epochs: 20, 50, 100, 300 and 500. The experimental results show that the deep learning model created with 300 epochs has the highest performance with an accuracy of 96.5%.

**EXISTING SYSTEM:**

Generally, most of the publication focus is on face construction and identity recognition when wearing face masks. In this research our focus is on recognizing the people who are not wearing face masks to help in decreasing the transmission and spreading of the COVID-19.In existing system used only machine Learning methods for face mask detection .But more difficult to the detection of anyone who is not wearing a face mask.

**DISADVANTAGES OF EXISTING SYSTEM:**

1. The major drawback is the classical machine learning methods to get highest consume time and lowest accuracy.
2. It involves very lengthy and complicated procedure of calculations and analysis.
3. **Algorithms: Random forest, Naivebyes**

**PROPOSED SYSTEM:**

To find the optimal epoch for the developed training model using the YoloV5, the training face mask dataset of 682 images divided into three classes, including "With\_Mask", "Without\_Mask" and "Incorrect\_Mask" are run with five different epochs: 20, 50, 100, 300, and 500. The precision and recall were also computed. Each model was validated with 85 face mask images. The validation process provided the precision and recall of each individual class. The plots of the precision and recall of each model are shown in Specifically, indicates that the training model with 300 epoch provided the highest performance among all of the training models.

**ADVANTAGES OF PROPOSED SYSTEM:**

* The experimental results for face mask detection obtained from the deep learning models with different epochs, including 20, 50, 100, 300 and 500, were examined and discussed in Section
* 1) incorrect mask in a oneperson image, 2) with mask in a people image 3) with/without mask in a crowd image.

**Algorithm:** face mask detection, deep learning, Yolov5

**SYSTEM REQUIREMENTS:**

**HARDWARE REQUIREMENTS:**

* System : Intel Core i3.
* Hard Disk : 1TB.
* Monitor : 15’’ LED
* Input Devices : Keyboard, Mouse
* Ram : 8GB.

**SOFTWARE REQUIREMENTS:**

* Operating system : Windows 10.
* Coding Language : Python
* Tool : PyCharm, Visual Studio Code
* Database : SQLite

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