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In Collaboration with

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Be Sensible to Mask Wearing: Detecting the Proper Placement of Face Masks Worn on Faces

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ABSTRACT

With the spread of the Covid-19 virus, there have been lots of precautionary measures that the World Health Organization (WHO) as well as all the other sectors in every country have taken and also asked the people to practice so as to stop the spread of the virus by preventing the pathogen particles reaching out to human beings. Among all these precautions, nowadays we are able see that the face mask is playing a vital role amongst people. This research was influenced by the roles that the facemasks use to play for the prevention of the transmission of these particles and this research will be carried out as an assistance for people to wear the facemasks in the appropriate order at places where they have been asked to use facemasks. This thesis will propose a system that could detect the proper placement of face masks on people's faces. An object detection task is carried out for the detection of incorrect and correct wearing conditions. A dataset containing 2000 annotations, respectively 1000 per each class was created by gathering images from several online sources and annotating each image manually so as to build a robust model utilizing the dataset and conquer the ability of performing detections on different mask types at a faster fps rate when it is performed on videos as well as webcam video input streams. Also, the dataset containing annotations which is essential in terms of training an object detection model will be made publicly available by the end of this research since there had been the limitation of not having an annotated dataset for benchmarking as well as to prolong a work that had been carried out up to a certain extent, so as to progressively evolve with the detection ability of the proper placement of facemasks worn on faces detection model.

Keywords: Covid-19, Computer vision, Image Processing, Deep Learning, Object Detection, YOLO algorithm.