ABSTRACT

The use of masks based on the decision of the Minister of Health which aims to prevent the transmission of COVID-19 and the lack of supervision carried out by the COVID-19 task force are obstacles that often occur in the community, therefore a mask detection system is needed that is able to provide public automatically. to detect masks as safety in preventing COVID-19. In this study, a mask detection system uses the Convolutional Neural Network (CNN) method with the InceptionV3. The results showed that the best model training was at epoch 40, batch size 60 and learning rate 0.000002 ($2x10^{-6}$)) and resulted in a training model accuracy value of 99.87% and a training loss 0.89%The results of the test parameters are accuracy based on the resulting confusion matrix value of 99.87%, 99.74% precision, recall and F1-score 99.86%Masked face detection in bright conditions resulted in the highest average accuracy rate at a distance of 50cm, which is 100% and the lowest average accuracy at a distance of 150cm, which is 99.99%. and the lowest average accuracy is 98%. Unmasked faces with bright conditions were detected with the highest average accuracy rate at a distance of 50cm, which is 100% and the lowest average accuracy value at a distance of 250cm, which is 85.27%. While the detection of unmasked faces in dark conditions with the highest average accuracy at a distance of 50cm is 100% and the lowest average accuracy at a distance of 250cm is 79.63%. Testing of the mask detection system on the use of this type of mask can be successfully detected and the accuracy rate is 100%.

***Keyword**: Covid-19, Mask, CNN, InceptionV3, Test Parameters*