

CLASSIFICATION OF FACE MASKS USING CONVOLUTIONAL NEURAL NETWORK

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ABSTRACT

COVID-19 is a contagious disease caused by a newly discovered type of coronavirus. The new virus and the infection first appeared in Wuhan, China, in December 2019. COVID-19 is a pandemic that has occurred in many countries around the world. When a vaccine has not been found, and the effectiveness of drugs has not been tested, masks play an important role in reducing the transmission of the virus, which is spreading rapidly. The government's effort in preventing the transmission of COVID-19 is by requiring the public to wear masks and monitor the use of shows by the community in everyday life, to see the habitual discipline of wearing masks in public places, a system that can carry out surveillance is needed. In this study, a facial mask classification system was created using the Convolutional Neural Network Method to see the accuracy of faces using masks and not using masks. CNN is a type of Deep Neural Network because of its deep network level and is widely implemented in image data. In this study, a series of stages were carried out from identifying problems, collecting data obtained from Kaggle with the 7553 training dataset and 1376 testing dataset, and analyzing system design to pre-processing. The classification process uses the CNN method with 100x100 image size, 0.001 learning rate, 50 epoch, 3x3 kernel, and 2x2 pooling layer, obtained 98.68% training accuracy and 99.71% testing accuracy. The usage of Adam's optimizer increases accuracy by 1.03%.

Keywords: *COVID-19, Classification, Mask, Convolutional Neural Network.*