

Deep Learning Implementation Using Convolutional Neural Network for Face Recognition When Wearing Mask

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ABSTRACT

During the Covid-19 pandemic, the health protocol implemented to prevent transmission of the virus was to wear a mask that covers the nose tightly, but the masks used can complicate the facial recognition system, the facial recognition process fails to recognize faces because the nose and mouth should be clear without obstacles. , covered by a mask. Based on this, the purpose of this study is to apply a Deep Learning work model using the Convolutional Neural Networks method to recognize faces using masks. To test the accuracy of CNN, the CNN model used there are 4 models, 3 models made by yourself, and 1 model using Transfer Learning VGG16, the data used in the study amounted to 30 faces with each face added a digital mask. Augmentation was carried out to increase the data in the training process, then tested on 30 faces using original masks, video testing was also carried out to test the performance of the CNN model in recognizing moving faces. In this study, the test resulted in decreased accuracy between 5 to 30%.

Keywords: *Face Recognition, Mask, Face Mask Recognition, Deep Learning, Convolutional Neural Network*