Convolutional Neural Networks Based Face Mask Detection and Automated Door Entry Control System

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The Covid-19 disease is the latest health disaster caused by the coronavirus and its variants. It is rapidly spreading from person to person by air transmission caused by the close contact of the infected people. Due to the rapid spreading of the Covid-19 outbreak, World Health Organization (WHO) issued some health guidelines to minimize the spread of the Covid-19 virus. From regular Sanitization, keeping a social distance, and wearing face masks are the most health guidelines provided by the WHO. Wearing a facemask slows down the rapid community transmission of the virus. Using human resources to observe the wearing of face masks are the traditional way used to monitor the violations of face mask-wearing health guidelines. It was difficult to observe person by person in crowded places and those actions created huge queues in public places. This proposed system is monitoring the Facemask wearing incorrectly by the camera and Raspberry Pi module. This research analyses the existing machine learning algorithms to choose the best-matched one for the system. In the system VGG16 model is used to train the model since it was the most accurate one, founded in the research with 99.83% accuracy. This makes the researchers automate this procedure to get effective results to minimize the spreading of Covid-19.

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