

ABSTRACT

Over the past few months, Indonesia has been hit by Coronavirus Disease-2019 (COVID-19) that caused the Indonesian Government to finally implement Large-Scale Social Restrictions (PSBB). Indonesian government finally started implementing the New Normal in June 2020, which is a new order to adapt to COVID-19 disease spread. One of the rules that must be obeyed include wearing a mask when leaving the house and maintaining a safe physical distance. The government has also carried out various studies for handling COVID-19 through the Indonesian Research and Innovation Agency (BRIN), both in the health sector to find vaccines from COVID-19 and in the field of technology, one of which utilizes Artificial Intelligence (AI).

In this final project, a system that utilizes technology Artificial Intelligence (AI) implementation is proposed on Raspberry Pi 4. Taking advantage of Python programming language and some existing libraries, such as OpenCV and face_recognition. The proposed system recognizes a person's face and whether he uses a mask or not based on the trained model from previously stored dataset in the database. The results can then be displayed on a monitor screen. There are 5 faces datasets that are trained for the created program and 3 of them are validated.

System testing was carried on varying distances with a straight face position facing the camera, namely when the person was wearing a mask and when he was not wearing it. Further, a test was also carried out based on the position of the face with a fixed distance from the face to the camera, for both case when he was wearing a mask and not wearing it. After all aforementioned tests, the proposed system achieved, the best accuracy rate of 100% for both cases, i.e., when the user is wearing a mask and when he is not wearing it.

Keywords: Face Recognition, Python, Raspberry Pi 4