

## ABSTRACT

The COVID-19 pandemic is the biggest health problem happening in the world today. The COVID-19 pandemic has caused a health crisis and changed the lifestyle of the world community, including in Indonesia. One effective way to prevent the spread of this virus is to break the chain of its spread, and always comply with the COVID-19 health protocol. One solution to implementing the health protocol is to use an automatic doorstop that can open automatically if someone wears a mask, and his body temperature is less than 39 C. The benefit of this tool is to help prevent the spread of COVID-19 from visitors who do not wear masks.

This study uses Simple Image Classification Deep learning using Transfer Learning that uses datasets trained using pre-training from Imagenet and uses it as a starting point for learning new assignments. This system uses a Portable Computer (PC) and python on a Raspberry Pi as a microcontroller, a temperature sensor MLX90614 to measure body temperature by utilizing infrared radiation, and a web camera as an eye to detect the use of masks, while the automatic doorstop uses a servo motor. With this tool the author hopes to suppress the spread of COVID-19 and be able to end it so that everyone can return to normal activities without being disturbed by virus disturbances.

In the results of this study, the camera is able to detect various types of masks but still has many shortcomings, some non-mask objects that cover the nose and mouth are still considered to be wearing masks by the system. The level of light intensity greatly affects the accuracy and stability of mask detection, the less light the camera captures, the more inaccurate the detection system can even detect. The MLX90614 sensor can only cover a distance of 1cm - 2cm, this is because the test uses the BAA type and from the specifications the sensor range is only around 2 cm. As a result, the level of accuracy decreases if the distance of the object from the sensor is getting further away. The servo motor is capable of being moved with input from the mask detection results but with a delay of 40 seconds. Meanwhile, for body temperature input, it still cannot maintain the open position as long as the subject passes through the doorstop so that when the subject has taken a temperature measurement, the doorstop will close again.

Keyword: *COVID-19, Deep Learning, Transfer Learning, camera, servo, Python.*