## *ABSTRACT*

*Since the beginning of the Covid-19 pandemic, the government has issued orders to implement social distancing or physical distancing. Social Distancing is a method of maintaining a distance of at least one meter from other people and avoiding crowds. This is useful for reducing / preventing disease transmission (virus), and it is hoped that this method can reduce chain of spread of covid-19. So the hospital can provide optimal service in accordance with the capacity provided. For this reason, this final project is structured to create a system that can detect violations of social distancing in an open place. This system is made using the You Only Look Once (YOLO) algorithm. With this system, it is expected to reduce crowds.*

*The developed system uses a pre-trained Yolov4 model to detect 80 object classes. Then the model will be modified using fine-tuning method to train new mode with new configuration and with three different dataset ratios as needed. Then using this model, a detection system is designed to detect social distancing violations. Testing of this system is carried out based on several scenarios starting form the distance of the camera, the distance between objects, and the angle of video.*

*The system is programmed using Python programming language with tools used for coding are Microsoft Visual Studio Code and Anaconda. The best results from the creation of the detection model are obtained from dataset ratio of 90% train data and 10% test data with the mean average precision results obtained is 54.11%, and the detection accuracy at the time of testing was 100%.*



***Keywords** : accuracy, mean average precision, python, social distancing, yolov4*