

## ABSTRAK

**Nama** : Muhammad Ahsan Maulana  
**Program Studi** : Teknik Informatika  
**Judul** : Sistem Pendeteksi Physical Distance Pada Antrian Menggunakan Metode YOLO (You Only Look Once) v3  
**Dosen Pembimbing** : Muhamad Soleh, M.Kom

Penelitian ini difokuskan pada implementasi dan pengujian Sistem Pendeteksi *Physical Distance* Pada Antrian Menggunakan Metode YOLOv3 dengan tujuan untuk membantu satgas COVID-19 pada area antrian dalam memantau serta menghimbau pelanggar *physical distance* secara langsung pada antrian sehingga antrian dapat berjalan sesuai dengan protokol kesehatan. Sistem dibangun menggunakan metode YOLOv3 dalam proses pendeteksian objek manusia dan menerapkan metode *euclidean* dua dimensi dalam proses pendeteksi pelanggaran *physical distance*. Metode pengujian berdasarkan hasil pengamatan dari video pengujian yang sudah diskenariokan dengan menggunakan *angel* kamera *High Angle* pada setiap video pengujian. Hasil pengujian berupa sebuah kesimpulan dimana menentukan dan menyesuaikan minimal jarak *physical distance* dalam satuan piksel dan maksimal jumlah objek yang terdeteksi pada jangkauan kamera untuk mendapatkan persentase hasil deteksi objek manusia dan deteksi pelanggaran yang terjadi. Pada pengujian video D dengan konfigurasi *MIN\_DISTANCE* sebesar 60 mendapatkan persentase deteksi objek menggunakan YOLOv3 mencapai 94,17% dengan *false detection* sebanyak 0. Kemudian untuk persentase pelanggaran *physical distance* mencapai 100%. Diharapkan hasil penelitian ini dapat membantu satgas COVID-19 pada area antrian dalam memantau serta menghimbau pelanggar *physical distance* secara langsung pada antrian sehingga menumbuhkan kesadaran diri masyarakat terkait antrian yang sesuai dengan protokol kesehatan.

Kata kunci: COVID-19, *euclidean*, *false detection*, *physical distance*, YOLOv3.

## ABSTRACT

*This research is focused on designing and testing physical distancing detection systems in queues with the aim of assisting the COVID-19 task force in the queue area in monitoring and appealing to physical distance violators directly in queues so that queues can run in accordance with health protocols. The system was built using the YOLOv3 method in the process of detecting human objects and applying the two-dimensional Euclidean method in the process of detecting physical distance violations using visual studio code and the python programming language. The test method is based on the results of observations from four test videos that have been screened using an angel High Angle camera in each test video. The test results are in the form of a conclusion which determines and adjusts the minimum physical distance distance in pixels and the maximum number of objects detected in the camera range to get the percentage of the results of human object detection and detection of violations that occur. The test is to determine the right configuration for each video test, in the video D test by configuring MIN\_DISTANCE 60, the percentage of object detection using YOLOv3 reaches 97.50% with false detection of 0. Then the proportion of violations reaches 100%. It is hoped that the results of this study can help the COVID-19 task force in the queue area in monitoring and appealing to physical distance violators directly in the queue so as to foster public self-awareness regarding queuing in accordance with health protocols.*

*Keywords: COVID-19, euclidean, false detection, physical distance, YOLOv3.*