

ABSTRACT

Artificial Intelligence (AI) is a field developed to study and mimic human intelligence into a computer system. One of the results of AI development, especially in the field of deep neural networks is face recognition technology. Face recognition is a system that It is used to recognize human faces in an image. In this final project, the implementation of face recognition technology on the unmanned aerial vehicle (UAV) for several purposes such as surveillance, people search, and remote monitoring.

In this final project, the application of face recognition is implemented using the YOLOv5 algorithm as object detection and making algorithm for object tracking. To find out the best performance, this research will test 3 models, namely YOLOv5n, YOLOv5s, and YOLOv5m. To find the best model will be evaluated using the Mean Average Precision (mAP) parameters, the effective detection distance, and the model inference speed.

The comparison results show that the YOLOv5n model has the best inference speed of 5ms, however, this model has the lowest mAP value of 79,8%. Meanwhile, YOLOv5m has the best mAP value of 84,8% with an inference speed of 13ms. And the YOLOv5s model has a large difference in inference speed small with YOLOv5n with 7ms and mAP value of 82,4%.

Keywords: Face Recognition, Unmanned Aeiral Vehicle, YOLOv5, Deep Neural Network