

ABSTRACT

Drones are currently being used in a wide range of useful tasks that are too dangerous or/and expensive to be performed by humans. However, this is increasingly developing security breaching issues due to the possibility of misuse of unmanned aircraft in illegal activities such as drug smuggling, terrorism etc. Thus, the detection and tracking of drones are becoming a crucial topic. Unfortunately, due to the drone's small size, its' detection methods are generally unreliable: high false alarm rate, low accuracy rate and low detection speed are well-known aspects of this detection.

The new emerging real-time algorithm based on the improved "You Only Look Once - version 3" (YOLO-V3) algorithm is proposed here for drone detection. This newly designed algorithm is consisting of three phases and has shown the potential to outperform the traditional detection approaches. The newly designed algorithm is trained and evaluated on the designed drone dataset. The evaluation results of our algorithm obtain 96% on average precision and 95.6% on accuracy.