TOPIC :LIVE OBJECT DETECTION AND INFORMATION EXTRACTION USING MACHINE LEARNING

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ABSTRACT

Object detection is a stimulating task in the applications of computer vision. It is gaining a lot of attention in many real-time applications such as detection of number plates of suspect cars, identifying trespassers under surveillance areas, detecting unmasked faces in security gates during the COVID-19 period, etc. Region-based Convolution Neural Networks(R-CNN), YOLO based CNNs, etc., comes under Deep Learning approaches. In this proposed work, an improved stacked Yolov3 model is designed for the detection of objects by bounding boxes. Hyperparameters are tuned to get optimum performance.

The proposed model evaluated using the COCO dataset, and the performance is better than other existing object detection models. Anchor boxes are used for overlapping objects. After removing all the predicted bounding boxes that have a low detection probability, bounding boxes with the highest detection probability are selected and eliminated all the bounding boxes whose Intersection Over Union value is higher than 0.4. Non-Maximal Suppression (NMS) is used to only keep the best bounding box. In this experimentation, we have tried with various range of values, but finally got better result at threshold 0.5.