

Object Detection

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Abstract: *Computer Vision is the branch of the science of computers and software systems which can recognize as well as understand images and scenes. Computer Vision is consists of various aspects such as image recognition, object detection, image generation, image super-resolution and many more. Object detection is widely used for face detection, vehicle detection, pedestrian counting, web images, security systems and self-driving cars. In this project, we are using highly accurate object detection-algorithms and methods such as R-CNN, Fast-RCNN, Faster-RCNN, RetinaNet and fast yet highly accurate ones like SSD and YOLO. Using these methods and algorithms, based on deep learning which is also based on machine learning require lots of mathematical and deep learning frameworks understanding by using dependencies such as TensorFlow, OpenCV, imageai etc, we can detect each and every object in image by the area object in an highlighted rectangular boxes and identify each and every object and assign its tag to the object. This also includes the accuracy of each method for identifying objects.*

Keywords: Object Detection, Computer Vision, Deep Learning, Convolutional Neural Networks, Real-time Processing, Evaluation Metrics, Transfer Learning

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