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ABSTRACT

Humans can easily detect and identify objects present in an image. The human visual system is fast and accurate and can perform complex tasks like identifying multiple objects and detect obstacles with little conscious thought. With the availability of large amounts of data, faster GPUs, and better algorithms, we can now easily train computers to detect and classify multiple objects within an image with high accuracy.

Fast, accurate algorithms for object detection would allow computers to drive cars without specialized sensors, enable assistive devices to convey real-time scene information to human users, and unlock the potential for general purpose, responsive robotic systems.

Currently, there are various methods and algorithms for object detection and tracking such as Convolutional Neural Network (CNN), region based methods such as Faster R-CNN and Fastest R-CNN, Deep Learning Neural Networks, etc. but these approaches for object detection usually suffer from the slow response time in real time. This report on object detection explains the You Only Look Once (YOLO) algorithm for object detection which out performs the other algorithms and is the state of the art technology for object detection.

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