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***Abstract*— Computer vision is one of the technologies that aim at digitally perceiving the real world at a higher level through digital images and videos. Object detection, a subset to computer vision is one of the prominent techniques in this area of research..Object detection is basically an algorithm based on either machine learning or deep learning approaches employed for classification of elements in diverse classes and localization in the image. This paper provides a comparison among the three prominent approaches to achieve object detection. R-CNN, Fast R-CNN, YOLO are the techniques in the trend which facilitates the developer in accomplishing the task of detecting an object in the image. These techniques train and compute the parameters of the model in reduced hence increase performance as compared to the traditional object detection techniques.**

Keywords—Deep learning, object detection

I. INTRODUCTION

Object detection is a computer vision problem that deals of high accuracy and precision, especially in modern applications like autonomous cars, face detection, traffic sensing etc.

The paper discusses the techniques employed for object detection. The section II of paper explains the three prominent techniques for object detection. Section III gives the different metrics employed for evaluating the performance of object detection algorithm. This section also explains the various datasets employed for training and testing of object detection algorithms. Section IV gives comparison between the different techniques of object detection. Section 5 concludes the paper.

II. OBJECT DETECTION TECHNIQUES

Deep neural network- Inspired by the human brain, deep learning has been contributing abundantly in computer programming techniques, to enable the machine to perform tasks nearly imitating human intelligence. Being a subset of