Object Identification Using Deep Learning

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Abstract:

We present a new dataset to advance the state-of-the-art in object recognition by placing the question of object identification. Our primary goal is to identify the object that will be upload into our web application.

As by seeing the image or any object it is difficult to identify the image our system will be helping to recognize the object within the database of our image which contains thousands of images of living and nonliving objects. So it can easily identify the object.

Key Words:

Anaconda python3.6, Keras, TensorFlow, Django

1. Introduction:

The object identification system is a web application. Object understanding involves numerous tasks including recognizing what objects are present, determining the objects'. Image classification is straightforward, but the differences between object localization and object detection can be confusing, especially when all three tasks may be just as equally referred to as object recognition.

Object recognition refers to a collection of related tasks for identifying objects in digital photographs.

Hence, we have developed a web application to identify the image of the object and predicting their name or which they are known. *Image classification* involves predicting the class of one object in an image. *Object localization* refers to identifying the location of one or more objects in an image and drawing an abounding box around their extent. *Object detection* combines these two tasks and localizes and classifies one or more objects in an image.

1. 1 Motivation of the project:

As our works are dependable on the machine and technology. And emerging technology is based on artificial intelligence, deep learning, and machine learning. So it is a must for the machine to identify the object or the images or the pictures on the field in which the machine is working.

On behalf of such technologies and life moving fastly towards online platforms because the pandemic

The situation we are going through. The world is moving forward to going contactless and through an online platform. So machine we are focusing on images to be identified on the online platf orm.

e.g. For a car to decide what to do next: accelerate, apply brakes, or turn, it needs to know where all the objects are around the car and what those objects are. Since it requires an object to be identified.

1.2 Literature survey

- Object detection is the identification of an object in the image along with its localization and classification. It has widespread applications and is a critical component for vision-based software systems.

2. Related work

Image classification:

Image Classification is a fundamental task that attempts to comprehend an entire image as a whole. The goal is to classify the image by assigning it to a specific label. Typically, Image Classification refers to images in which only one object appears and is analyzed. In contrast, object detection involves both classification and localization tasks and is used to analyze more realistic cases in which multiple objects may exist in an image.

Object detection is a computer vision technique that allows us to identify and locate objects in an image or video. With this kind of identification and localization, object detection can be used to count objects in a scene

and determine and track their precise locations, all while accurately labeling them.

Object localization:

Object localization refers to identifying the location of one or more objects in an image and drawing an abounding box around their extent. Object detection combines these two tasks and localizes and classifies one or more objects in an image.

3. Image collection

We next describe how the object categories and candidate images are selected.

3.1 Common object categories

The selection of object categories is a non-trivial exercise. The categories must form a representative set of all categories, be relevant to practical applications and occur with high enough frequency to enable the collection of a large dataset. Other important decisions are whether to include both "thing" and "stuff" categories

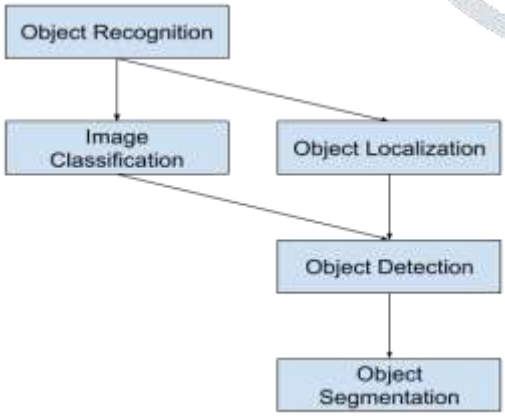
3.2 Non-iconic image collection

We may roughly group images into three types, 1.iconic-object images,2. iconic-scene images and 3.non-iconic images. Iconic-object images have a single large object in a canonical perspective centered on the image. Iconic-scene images are shot from canonical viewpoints and commonly lack people

4. Area of the project

- The main objective of this web application is to identify recognize and to predict the image or an object
- The image identification system is a web-based application which is useful all over the educational and corporate sector.

5. Architecture design



6. Working

It is an web application so you need is a internet running on ours laptop . You have to upload an image or picture this web application and then you need to submit the image after this the image or the object will be identified and it will predict the name of the object or image which we had submitted on the web application

CONCLUSION: In this seminar, a brief idea of an android based object identification system is elaborated. A literature review of on same can also be done & conclude that an efficient web-based object identification system can be implemented by using Python, Django software.

We design a home page where you can upload an image that you need to be identified or recognize within our platform.

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