Patent Search

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Abstract:

This invention describes various approaches, as well as methods, systems, and media that can be read by computers, all with the goal of providing quick and accurate object detection and classification in digital images. A computer device could, under some circumstances, be able to take an input picture. The picture may be processed on the computer device, and a convolutional feature map can be produced as a result. It is possible, in some setups, to run the convolutional feature map through a Region Proposal Network (RPN) in order to create recommendations for potential objects that are located inside an image. In a number of different scenarios, the computing device is able to run the convolutional feature map along with the proposals through a Fast Region-Based Convolutional Neural Network (FRCN) proposal classifier in order to identify a category for each individual object contained within the image and a level of confidence associated with that particular category. A requestor may then get from the computing device an output that includes the object categorization and/or confidence score.

Complete Specification

Description:The present invention is related to real-time object recognition using Data Science and Machine Learning.
Background of the invention:
The current innovation may be broadly categorized under the heading of "object recognition." Mobile gadgets of today, such as smartphones, tablets, mobile robots, and so on, may be outfitted with fast CPUs and sophisticated cameras, which enables mobile computer vision applications such as augmented reality, self-driving automobiles, and robotic pets, among other things. Object recognition is at the heart of many of these apps and serves as their primary feature (i.e., running computer programmes to identify objects in an image or video sequence).
Existing object recognition systems may make use of methods that are reliable when used in certain particular endeavours (e.g., wine label reading, product label reading, OCR-based language translation, etc.). Existing augmented reality (AR) systems integrate sensor approaches for context inference with computer vision algorithms for the detection of picture objects captured by devices. These techniques are used together to create augmented reality. These systems are able to perform reliably in the assumption of specialized tasks or controlled environments (for example, matching test images to a set of training images that were taken under similar conditions in the same location and exist in an image database). This type of task or environment is known as a controlled environment.
The need for consumers to conduct searches that are both quicker and more comprehensive grows in tandem with the capabilities of search engines. Because of advancements in both camera technology and search capabilities, image searches are becoming an increasingly common practice. The use of a convolutional neural network is the method that is most often used for object identification in picture searches. In order to improve the precision of the object identification in certain models, the convolutional neural network may be combined with a selective search to produce proposal pictures. This is done in an effort to expand the search space. However, the

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