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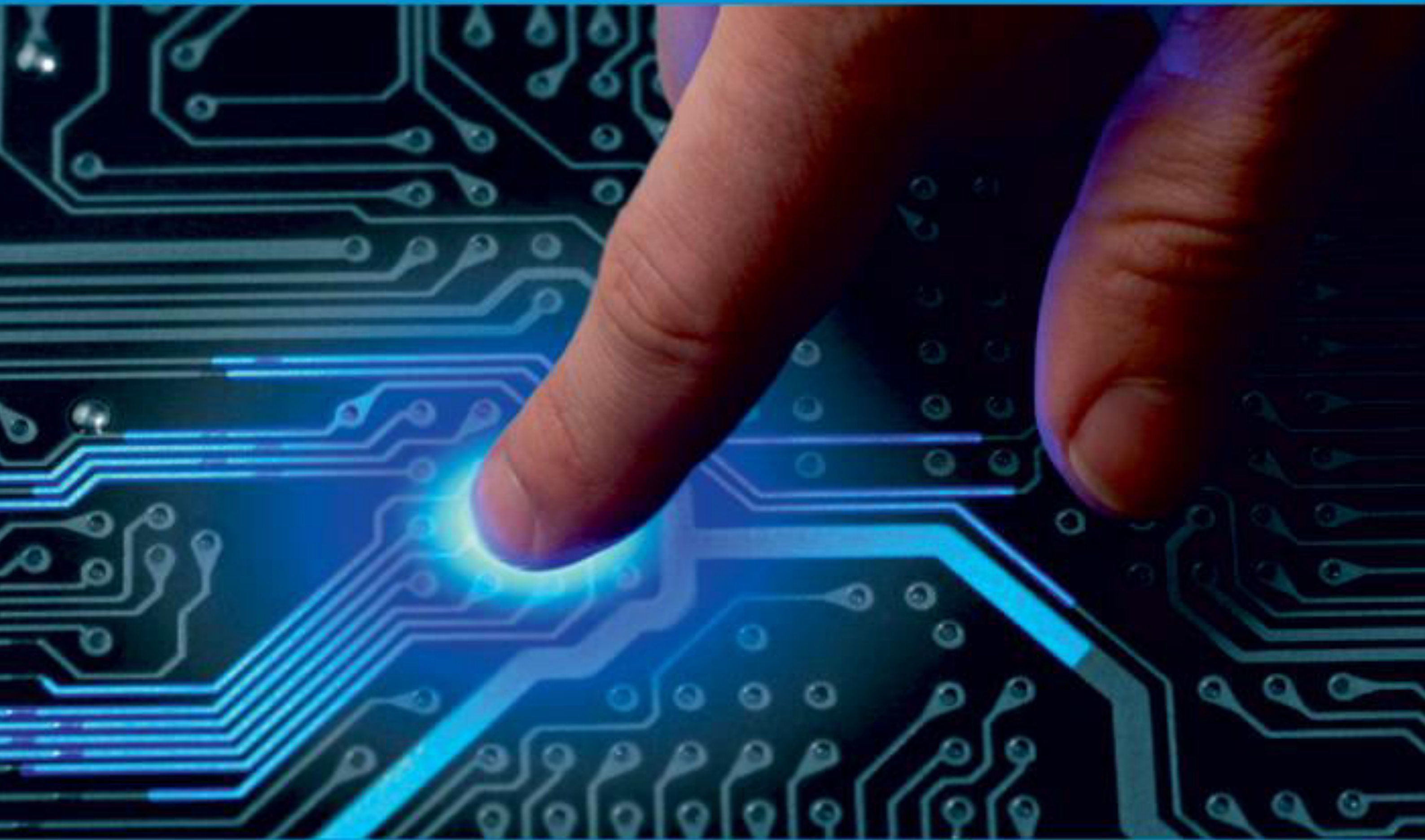

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Object Detection using YOLO Algorithm

Sujatha G S, Mrs Babitha

Assistant Professor, Department of Computer Science and Engineering, Sri Siddharatha Institute of Technology

Tumkur, Karnataka, India

ABSTRACT: We present YOLO, a new approach to object detection. Prior work on object detection repurposes classifiers to perform detection. Instead, we frame object detection as a regression problem to spatially separated bounding boxes and associated class probabilities. A single neural network predictsBounding boxes and class probabilities directly from full images in one evaluation. Since the whole detection pipeline is a single network, it can be optimized end-to-end directly on detection performance.Our unified architecture is extremely fast. Our base YOLO model processes images in real-time at A smaller version of the network, Fast YOLO, processes an astounding 155 frames per second while still achieving double the mAP of other real-time detectors. Compared to state-of-the-art detection systems, YOLO makes more localization errors but is less likely to predict false positives on background. Finally, YOLO learns very general representations of objects.

I. INTRODUCTION

In India, we currently have two types of People look at an image and immediately know what objects are in the image, where they are, and how they interact. The human visual system is fast and accurate, allowing us to perform complex tasks like driving with little conscious thought. Fast and accurate object recognition algorithms would enable computers to drive cars without specialized sensors, enable assistive devices to transmit real-time scene information to human users, and unlock the potential for responsive, general-purpose robotic systems. Current detection systems reuse classifiers to perform detection.To recognize an object, these systems take a classifier for that object and evaluate it at different locations and scales on a test image. Systems such as deformable part models (DPM) use a sliding window approach in which the classifier sweeps across the image at evenly spaced locations.

II. RELATED WORKS

The cross-representation problem is recognizing visual objects, whether they are photographed, painted, drawn, etc. The forms are likely to advance both the fundamentals and applications of computer vision. In this article, we compare classification, domain matching, and deep learning methods; showing that none of the s perform consistently well on the cross-representation problem. Given the current interest in deep learning, the fact that such methods show the same behaviour as all other methods except for one: they show a significant drop in performance on inhomogeneous databases compared to their peak performance, which always consists on data consisting only of photos exist .Rather, we find that methods with strong models of spatial relationships between parts tend to be more robust, and therefore conclude that such information is important when modeling object classes independent of appearance details. We investigate the issue of feature sets for robust visual recognition of objects using linear SVM-based human recognition as a test case. After reviewing existing edge- and gradient-based descriptors, we experimentally show that Histograms of Oriented Gradient (HOG) lattice descriptors significantly outperform existing human recognition feature sets.Weexamined the impact of each computational stage on performance and concluded that fine-scale gradients, fine orientation clustering, relatively coarse spatial clustering, and high-quality local contrast normalization in overlapping descriptor blocks are important for good results. The new approach provides near-perfect separation in the original MIT pedestrian database, so we present a more sophisticated dataset containing more than 1,800 annotated human images with a variety of pose variations and backgrounds.

III. PROBLEM STATEMENT

- In the earlier days the blind people are catered with the basic learning's of the Braille system**.**
- The language in the Braille will go from left to right across the page, just like printed words.

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EXISTING SYSTEM

We present object detection as a regression problem on spatially separated bounding boxes and associated class probabilities. A single neural network directly predicts bounding boxes and class probabilities from whole images in one evaluation.

IV. PROPOSED SYSTEM

The YOLO model processes images in real time at 45 frames per second. Fast YOLO, a smaller version of the network, processes a staggering 155 frames per second and still achieves twice the MAP compared to other real-time detectors. With state-of-the-art detection systems, YOLO makes more location errors but is less likely to predict false positives in the background. Finally, YOLO learns very general representations of objects. Outperforms other detection methods including DPM and CNN whenGeneralization of natural images to other areas such as works of art.

RESOURCES NEED FOR THE PROJECT

3.1 H/W System Configuration:

Processor	Dual Core.
Speed	1.1 G Hz.
RAM	8 GB (min).
Hard Disk	20 GB.

3.2 S/W System Configuration:

Operating System	Windows 10.
Technology	Machine Learning.
Front End	GUI-tkinter, flask
IDLE	Python 3.7 or higher.

SYSTEM DESIGN

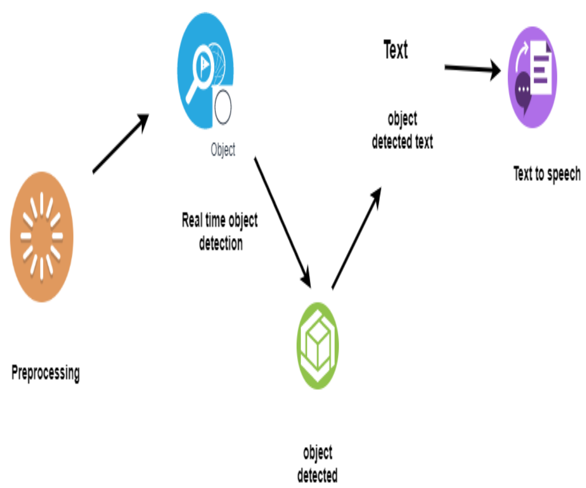

Fig. 1 Architecture

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List of Modules:

1. Real time object detection
2. Text To speech
3. Speech to Text

List of Algorithms:

1. Yoloalgorithm.

V. RESULT

CONCUSION

I the above project shows Our model is easy to build and can be trained directly on full screens. In contrast to classifier-based approaches, YOLO is trained on a loss function that corresponds directly to recognition performance, and the entire model is trained together. Fast YOLO is the fastest general purpose object detector in the literature and YOLO advances the state of the art in real-time object detection. YOLO also generalizes well to new domains, making it idealfor applications that depend on robust and fast object recognition and also use text-to-speech.

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