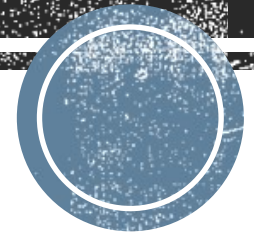# Team Visionaries

CIS- 8395 – Project Proposal – Custom Object Detection

Presenters:
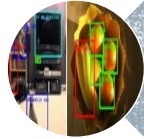
Anirudh Chaudhary

Utkarsh Kekre

Agenda

Business Problem
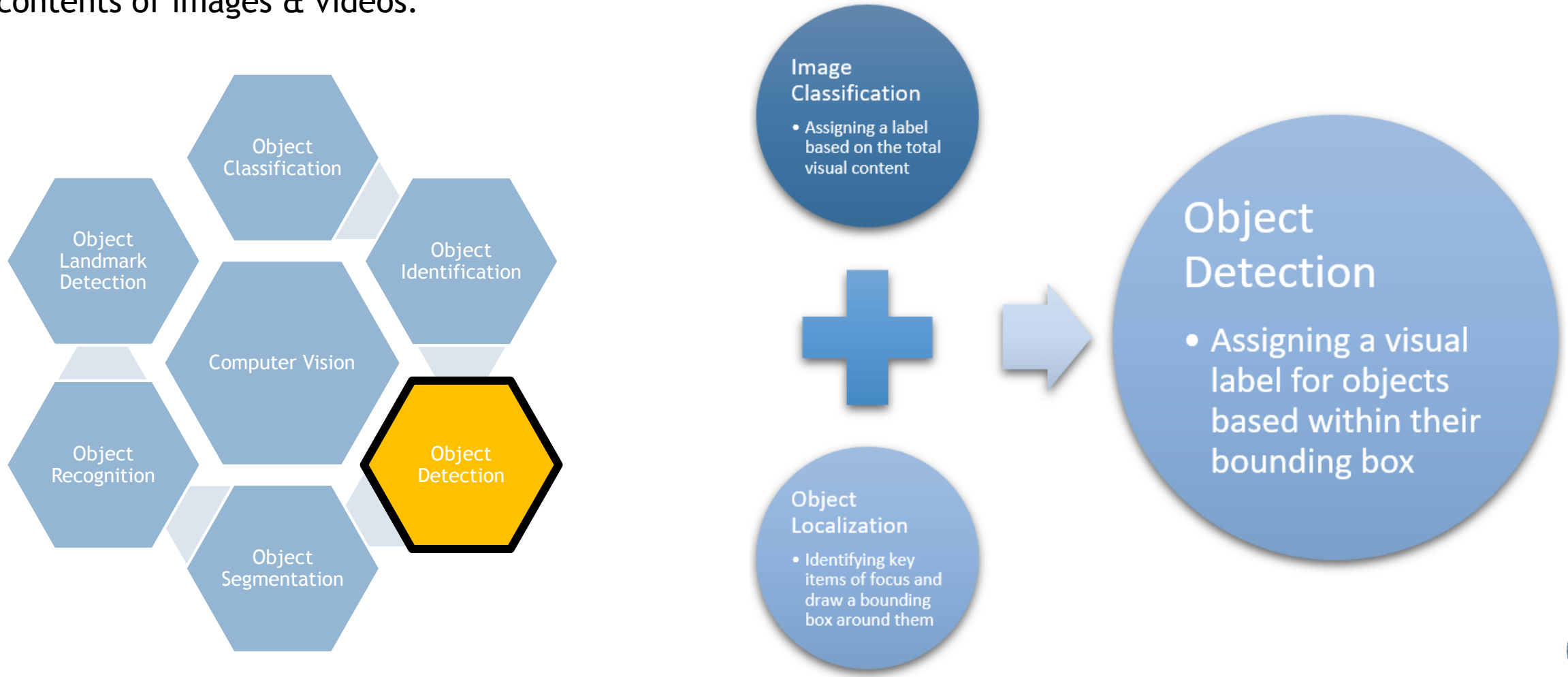
Object Detection

Architecture

Data

YOLO

Business Problem

- To develop a system which eliminates the need of camera men for recording a sports match and automate the entire broadcasting mechanism

- Possible Sports Implementation:
  - Football – Our FOCUS
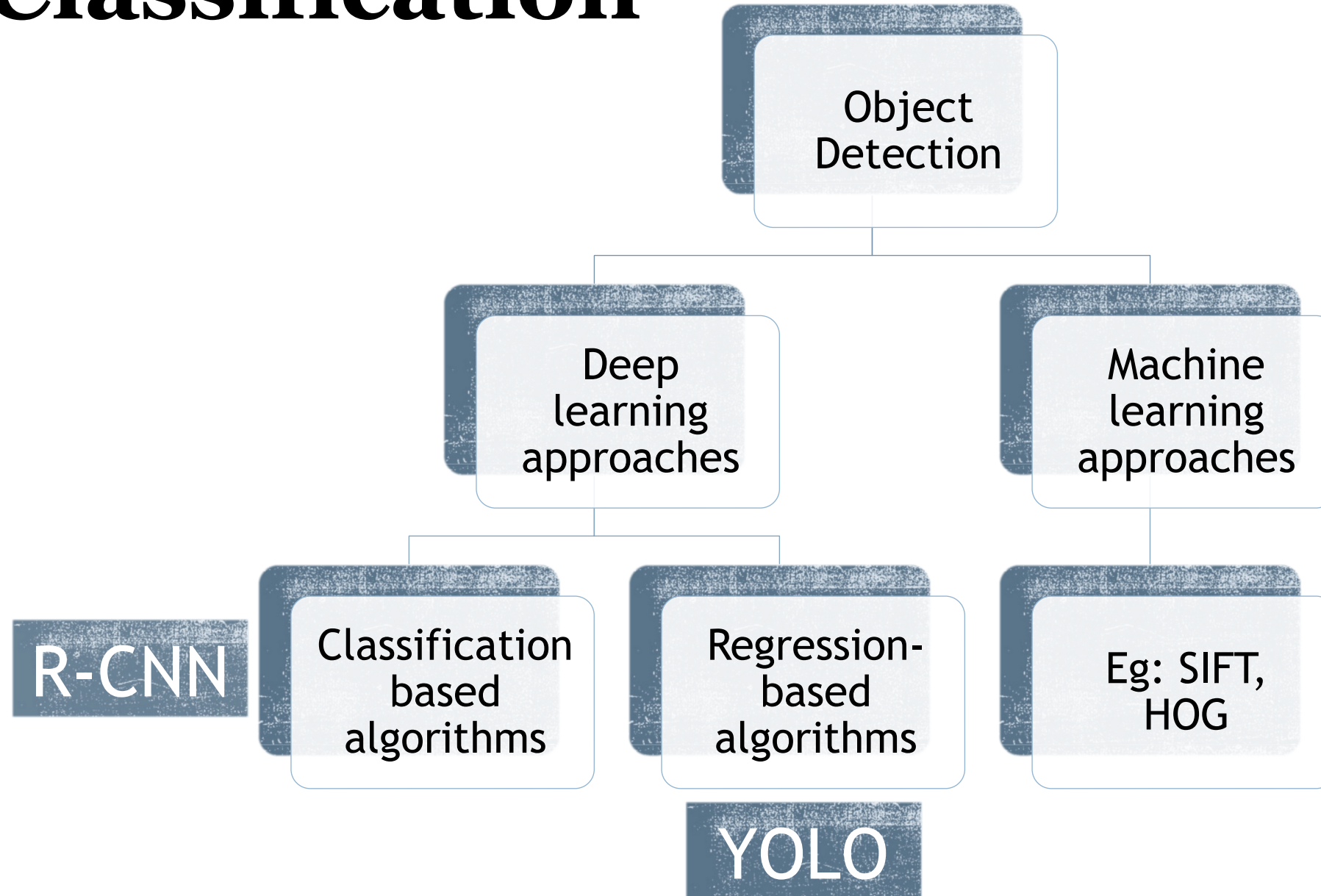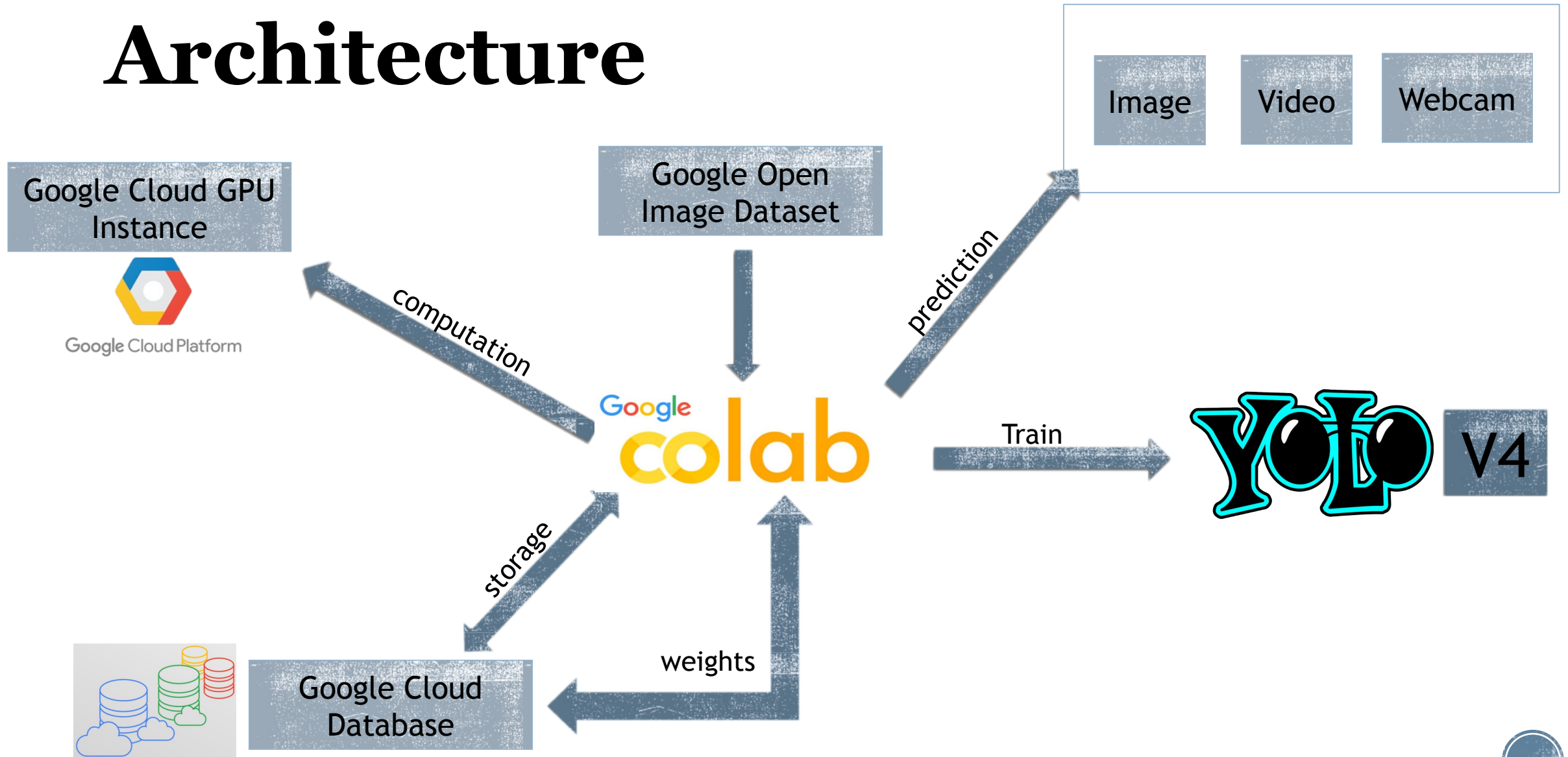 - Hockey
  - Basketball

Object Detection

Computer Vision (CV): Field of study that deals with techniques to help computers 'see' and understand contents of images & videos.

Object Classification

Object Landmark Detection

Object Identification

Computer Vision

Object Recognition

Object Detection

Object Segmentation

Image Classification
- Assigning a label based on the total visual content

Object Localization
- Identifying key items of focus and draw a bounding box around them

Object Detection
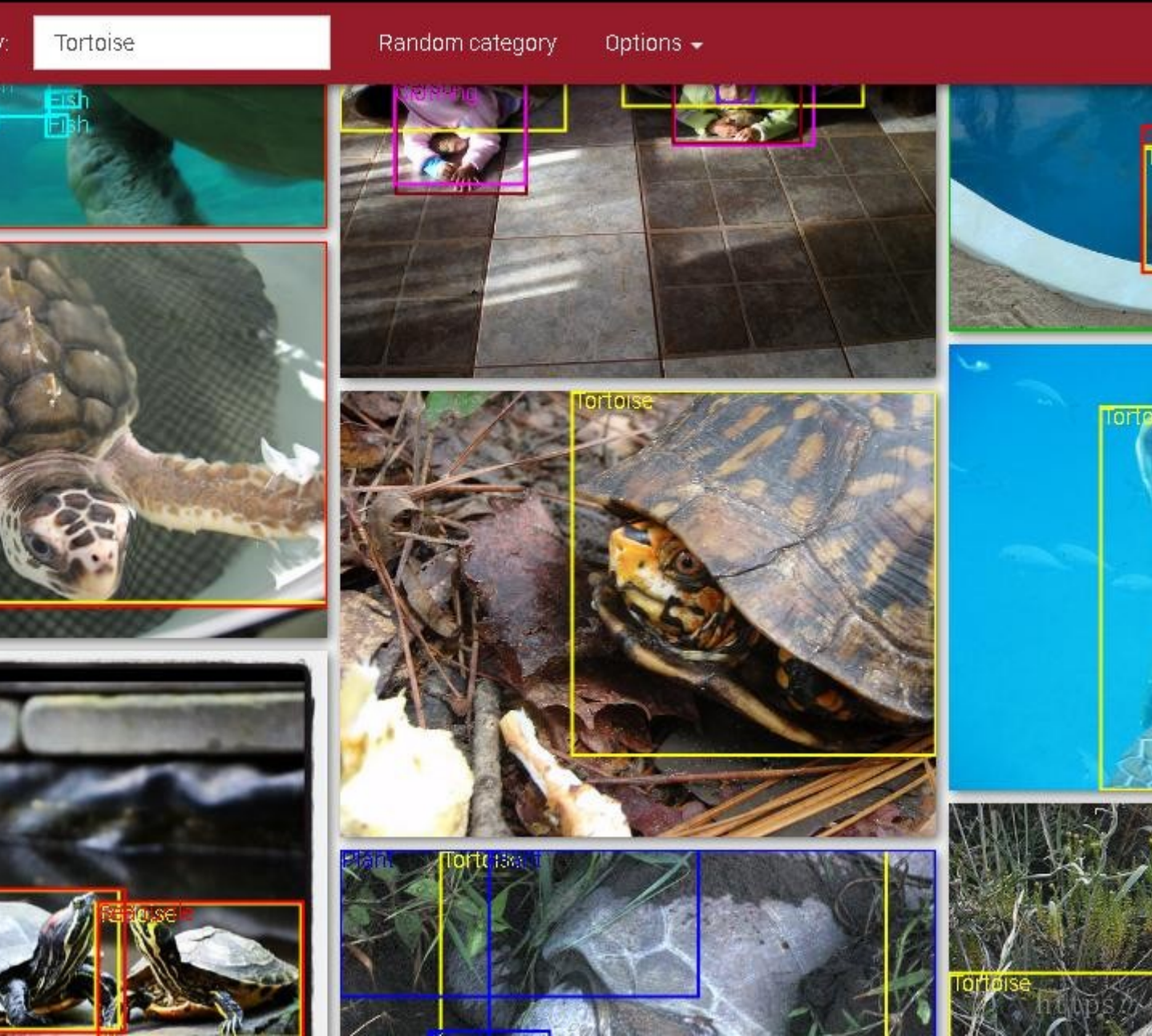- Assigning a visual label for objects based within their bounding box
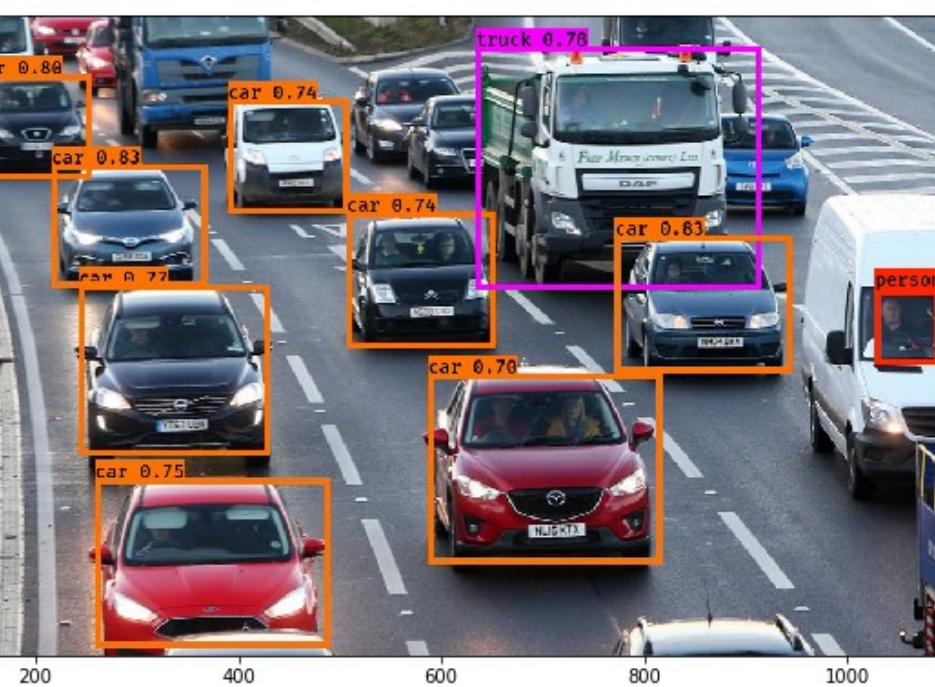
Classification

Architecture

Data

Google Open Image Dataset

- ~9 Millions varied images with rich annotations

- Images are diverse, contain complex scenes with several objects (8.4 per image on average)

- Image-level annotations and object bounding boxes

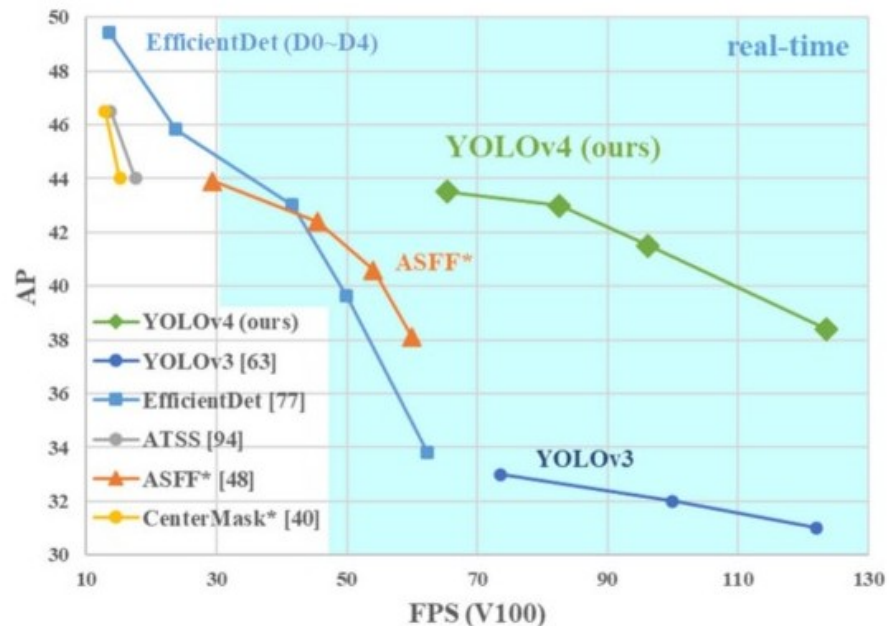- Object segmentation, visual relationships and localized narratives

YOLO

- YOLO (*You Only Look Ones*) is a state-of-the-art, real-time object detection system based on deep-learning approach

- It is a clever Convolutional Neural Network (CNN)

- Takes entire image in a single instance and predicts the bounding box coordinates and class probabilities of each box

- Incredible SPEED with comparable performance among its counterparts

- YOLO is a one-stage detector make the predictions for object localization and classification at the same time

- 43.5% AP (65.7% AP50) for the MS COCO dataset at a real-time speed of ~65 FPS on Tesla V100.

THANK YOU

QUESTIONS..??

References

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