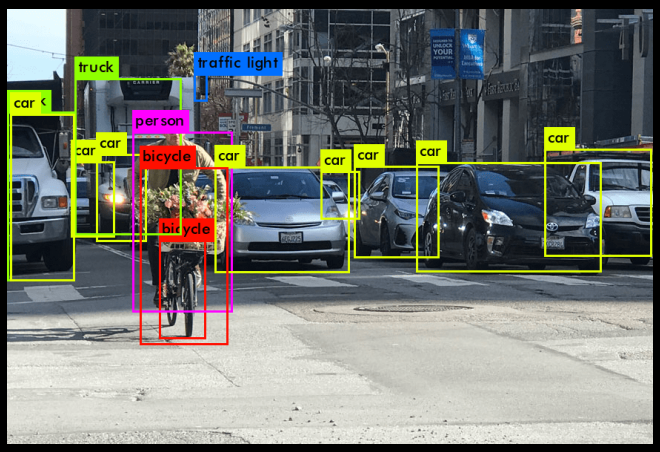
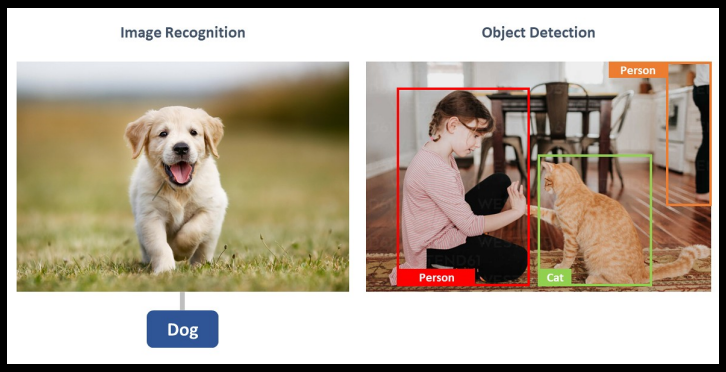
Object detection is a computer vision task that involves identifying and locating multiple objects within an image or video. Unlike image classification, which only assigns a label to an image, object detection provides additional spatial information by drawing bounding boxes around detected objects.



Agenda

1. Input
2. Output
3. Bounding Box



Img Class → What ?

Obj Detect → What & where ?

Input

Image or Video Frame

Batch of Images

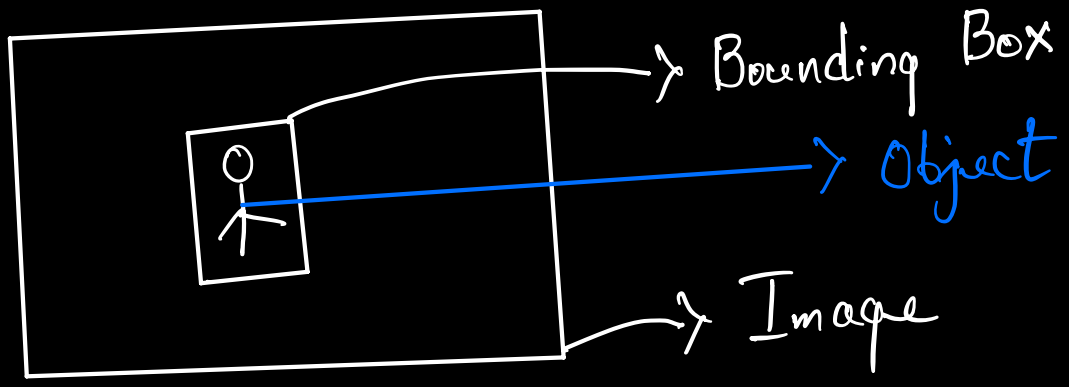
Output

Bounding Box → coordinates of the object

Class Labels → class names

Confidence Score → Probability

Bounding Box

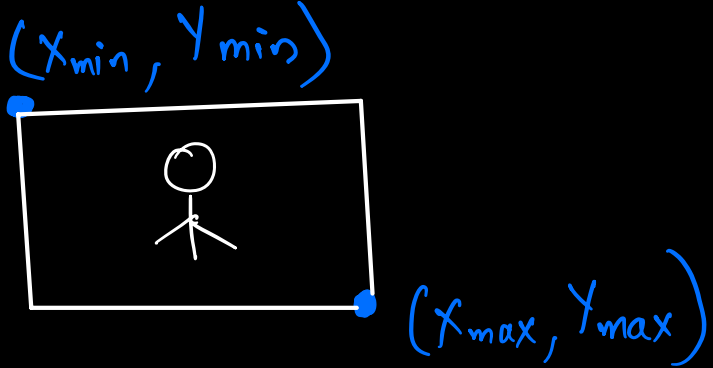


Rectangle Box

Position of an object within the image

X_{min}, Y_{min} :- Top left corner coordinates

X_{max}, Y_{max} :- Bottom Right corner coordinates



Data Used for Object Detection

Images, Labels ⟶ Img Class

Images, Labels ⟶ Bounding Box coordinates

↓

Class Labels

Training Data :- ① Images

② Annotation Files

- Class
- Bbox

Data Annotation Tools

1) Labelbox
2) Roboflow
3) Supervisely
4) LabelBox
5) makesense