

YOLO Object Detection Overview

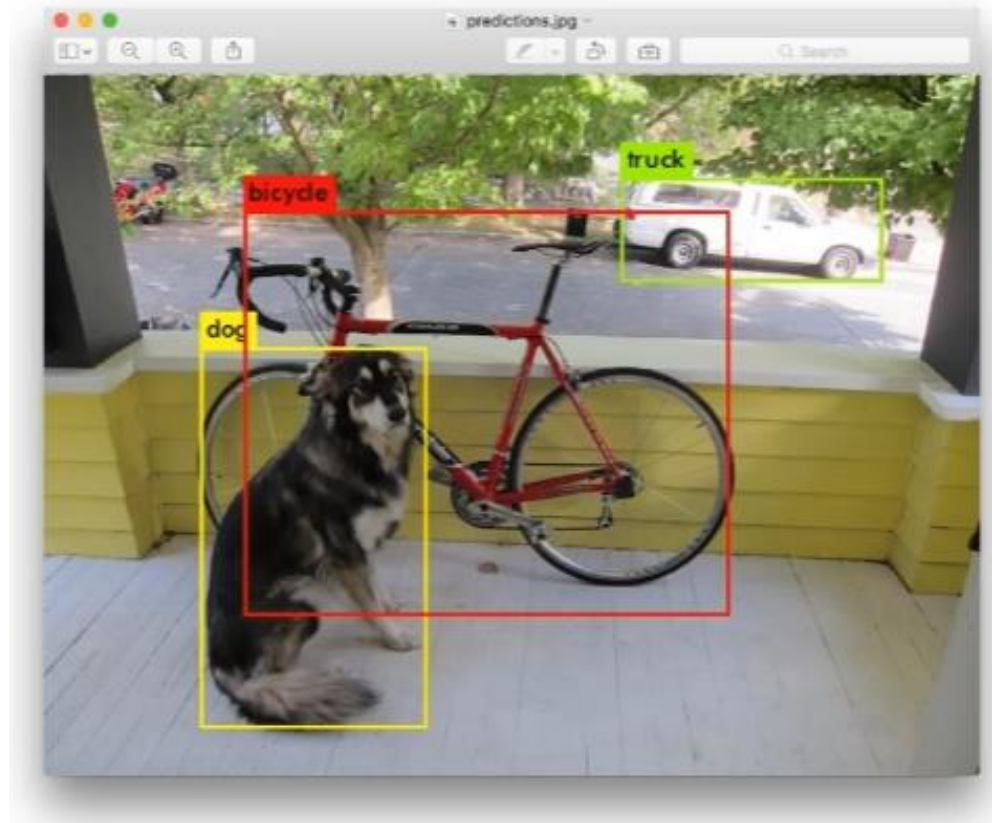
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- Let's learn about the state of art image detection algorithm known as YOLO (You Only Look Once).
- YOLO can view an image and draw bounding boxes over what it perceives as identified classes.

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- In this course we will be using version 3 of the YOLO Object Detection Algorithm, which further improve upon the original implementation in both speed and accuracy!
- So what makes YOLO different than other detection algorithms?

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- Prior detection systems repurpose classifiers or localizers to perform detection.
- They apply the model to an image at multiple locations and scales. High scoring regions of the image are considered detections.

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- YOLO uses a totally different approach. We apply a single neural network to the full image. This network divides the image into regions and predicts bounding boxes and probabilities for each region. These bounding boxes are weighted by the predicted probabilities.

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- YOLO has several advantage over classifier-based systems.
- It looks at the whole image at test time so its predictions are informed by global context in the image.

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- It also makes predictions with a single network evaluation unlike systems like R-CNN which require thousands for a single image. This makes it extremely fast, more than 1000x faster than R-CNN and 100x faster than Fast R-CNN.

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- In the next lecture we will load an already trained YOLO model and see how we can use it with either image or video data.
- We've set up an easy to use notebook, we just need to download the model weights file!