Prior Knowledge

YOLOv3:

YOLOv3 (You Only Look Once, Version 3) is a real-time object detection algorithm that identifies specific objects in videos, live feeds, or images.

The YOLO machine learning algorithm uses features learned by a deep convolutional neural network to detect an object.

How does YOLOv3 work? (Overview):

YOLO is a Convolutional Neural Network (CNN) for performing object detection in real-time.

CNNs are classifier-based systems that can process input images as structured arrays of data and recognize patterns between them (view image below).

YOLO has the advantage of being much faster than other networks and still maintains accuracy.

It allows the model to look at the whole image at test time, so its predictions are informed by the global context in the image.

YOLO and other convolutional neural network algorithms “score” regions based on their similarities to predefined classes.

High-scoring regions are noted as positive detections of whatever class they most closely identify with.

For example, in a live feed of traffic, YOLO can be used to detect different kinds of vehicles depending on which regions of the video score highly in comparison to predefined classes of vehicles.