deeplearning.ai

Object Detection

Object detection

Car detection example

Training set:

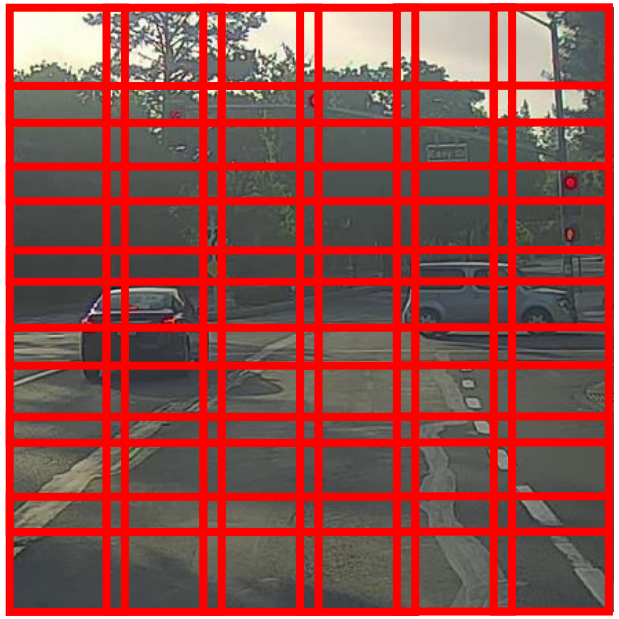
x	y
	1
	1
	1
	0
	0

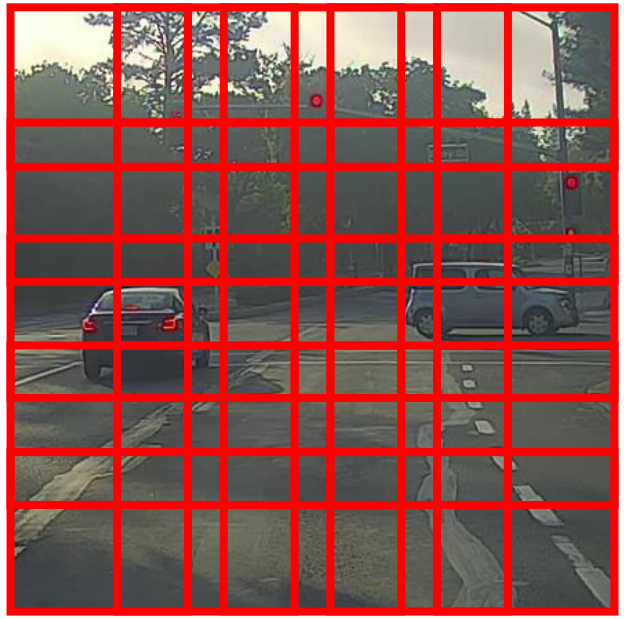
→ convnet → y

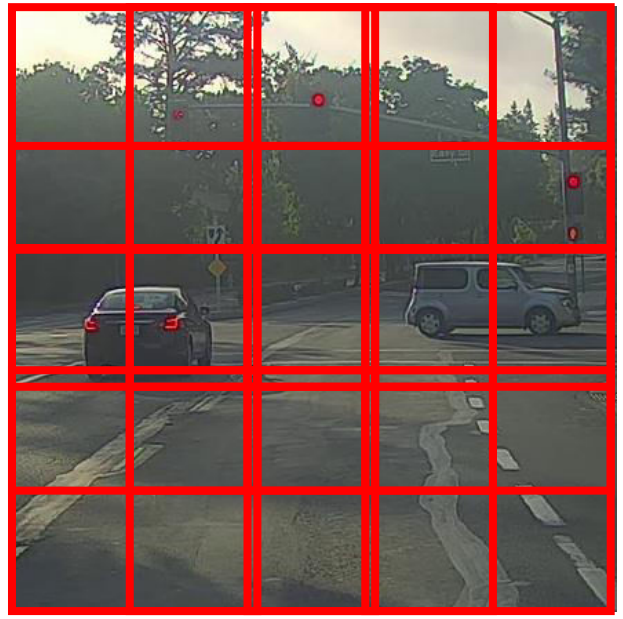
once you have a convnet that detects a car in an Image, you can use sliding windows object detection

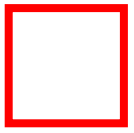
Sliding windows detection

2 criteria
① Passing through multiple windows & computing the same Image is expensive in CNN
② can make the stride bigger ⇒ fewer computations, but then performance ↓
③ Making stride very small ⇒ computation cost ↑



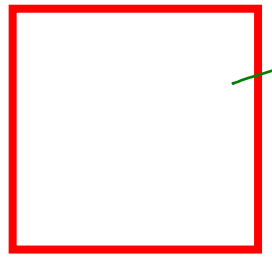






- Take a sliding window w/ some stride & pass it to the conv net for it to detect a y value (0 or 1)
- For each small square passed, you get a y value (hopefully $\hat{y}=1$ when there is a car in that window)

→ After you have run the conv net w/ the earlier window, you run the same convnet w/ the same Image, using larger windows



→ Run it w/ a larger window

Hopefully $\hat{y}=1$ for atleast 1 of these window sizes

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