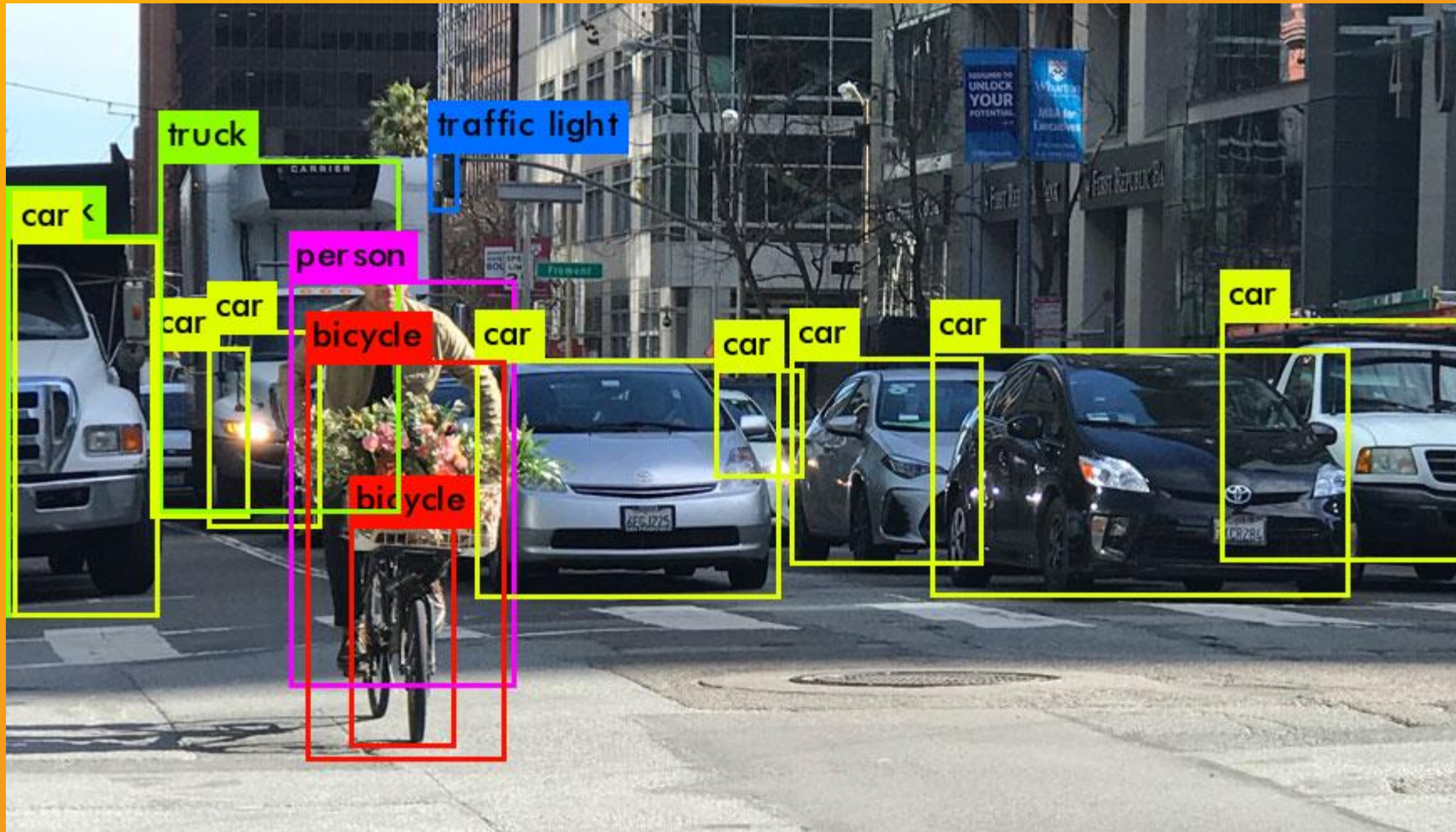
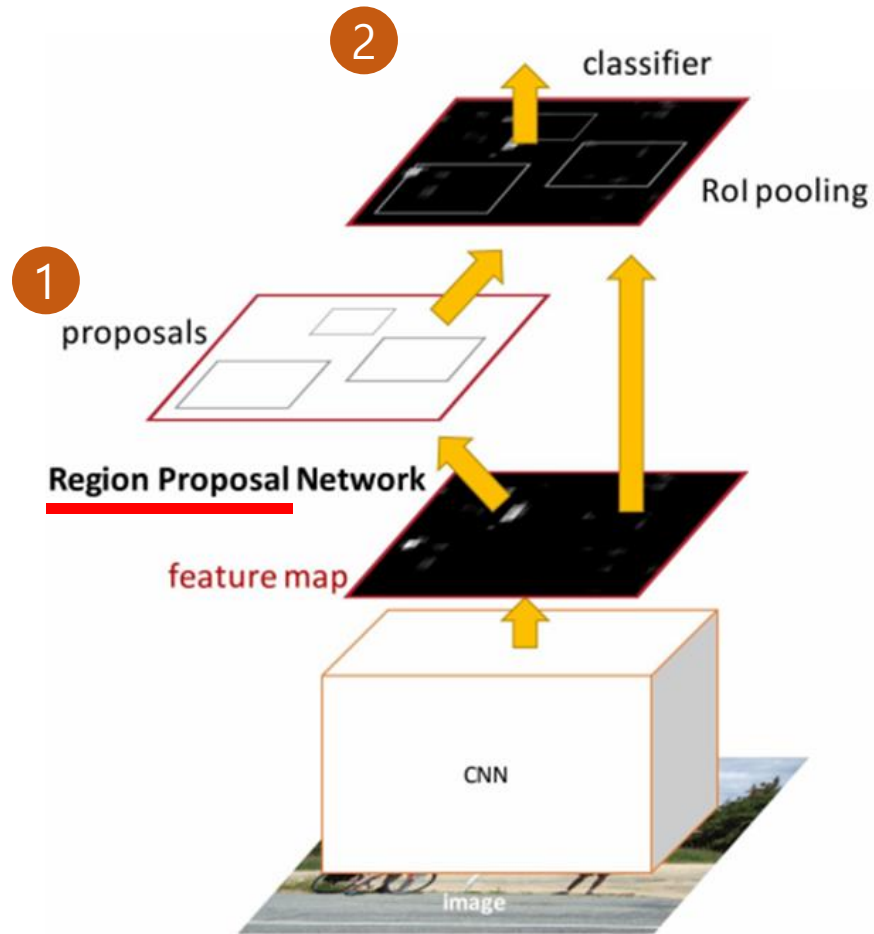


# YOLO (You Only Look Once) – 실시간 객체 검출 알고리즘

KIM JEONG HYUN



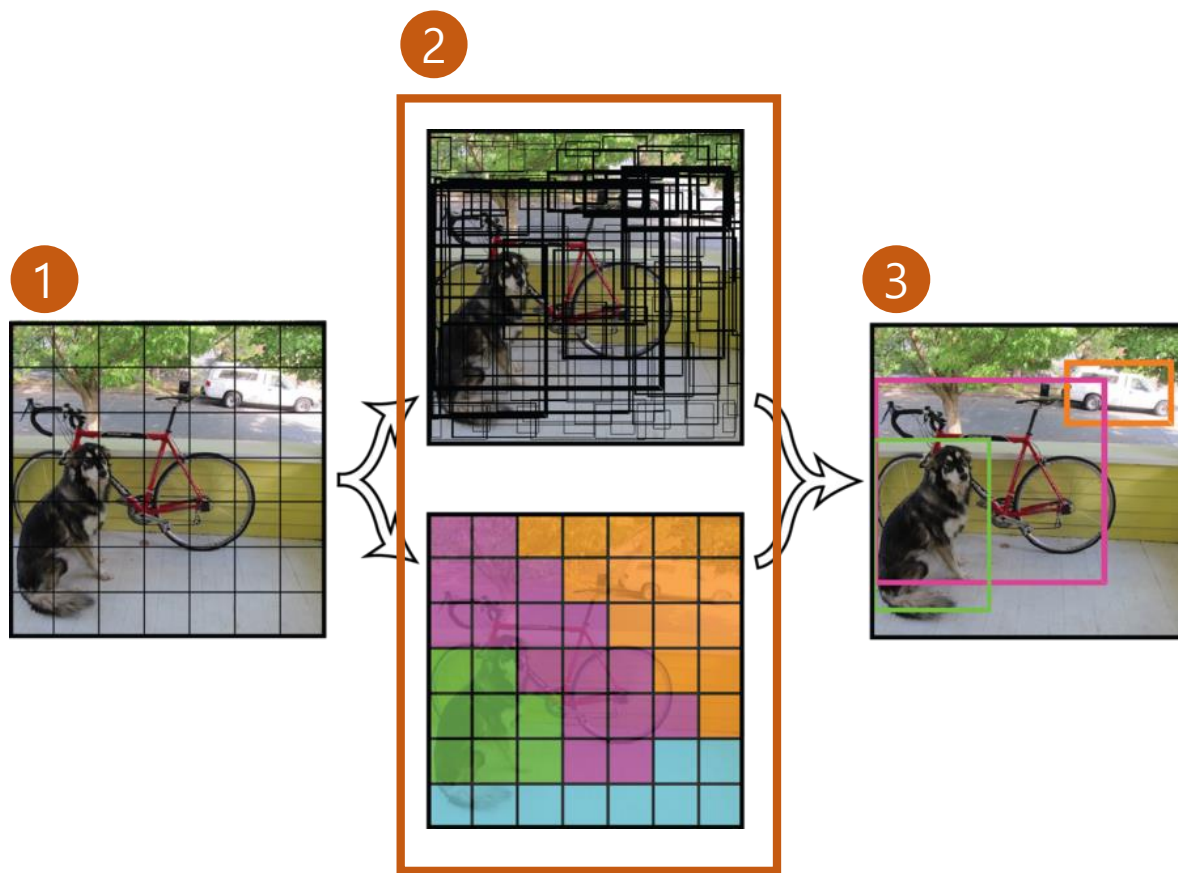
<https://www.youtube.com/watch?v=kxX09i4fds>



## Fast R-CNN

오브젝트가 있을 것 같은 영역을 뽑아서 제안  
객체 검출의 정확성은 높지만 신속하지 못함

**1 2 = Two-stage Methods**

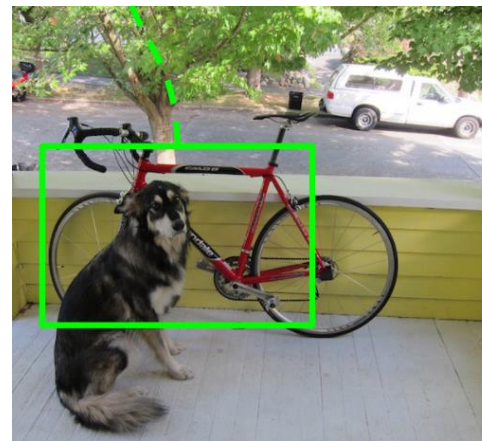
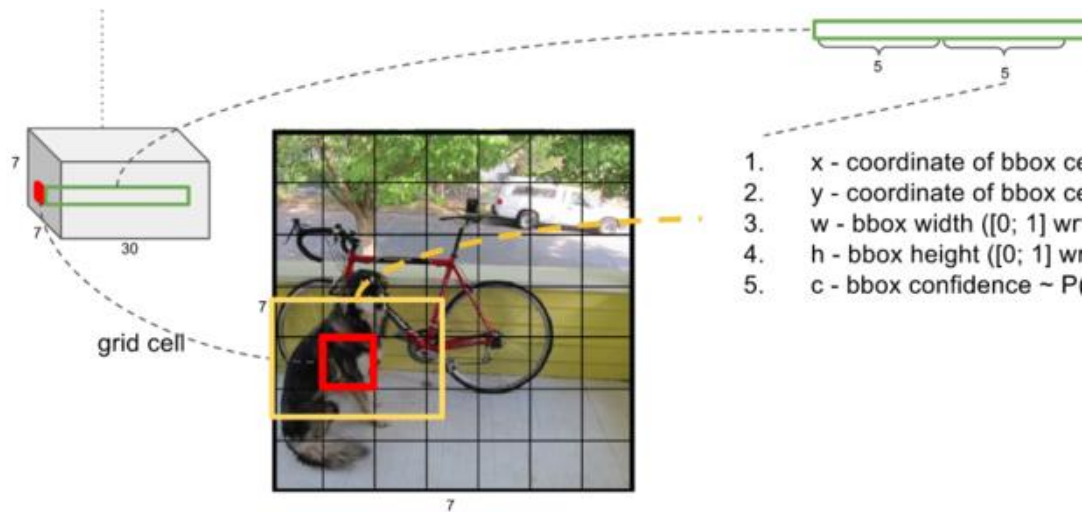
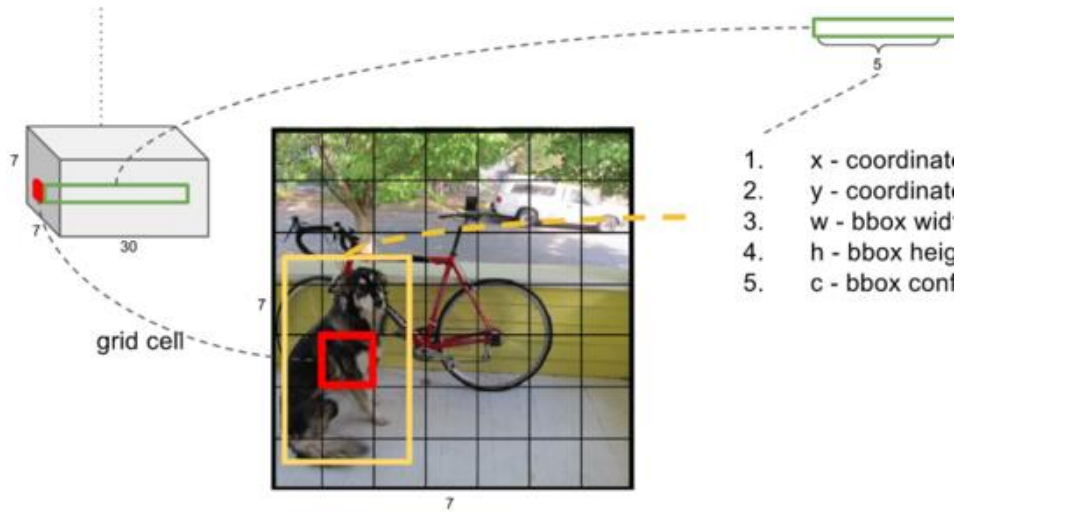


## YOLO (You Only Look Once)

- 1** 프레임을 7\*7 그리드로 분할
- 2** 각 그리드를 중심으로 Bound box 생성
  - 1) Bound box를 그리드 셀(7\*7)의 2배만큼 생성  
→ 프레임 상의 오브젝트 위치 예측
  - 2) 제안된 Bound box의 오브젝트 class 구분
- 3** 객체별 class와 영역 검출

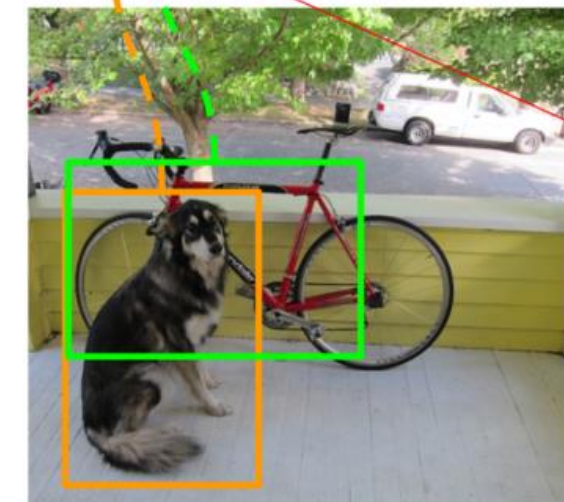
 = **Single-stage Methods**

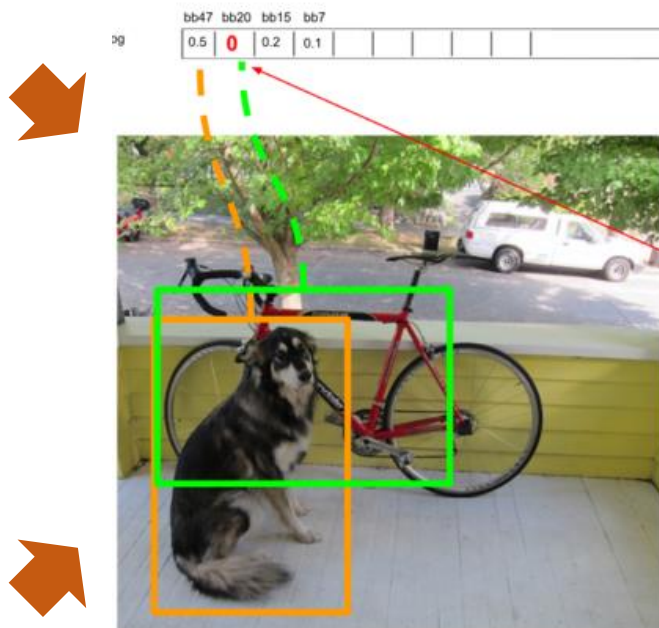
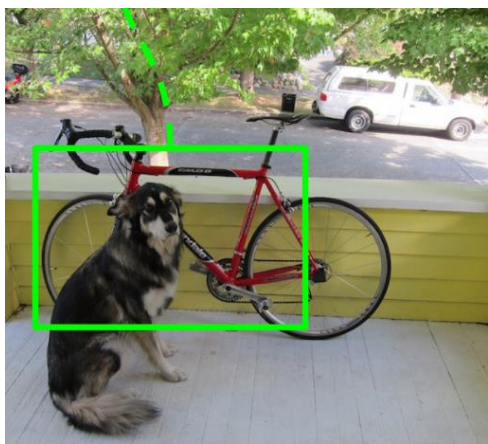
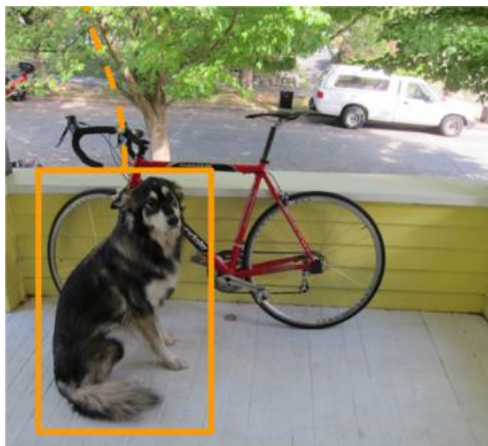




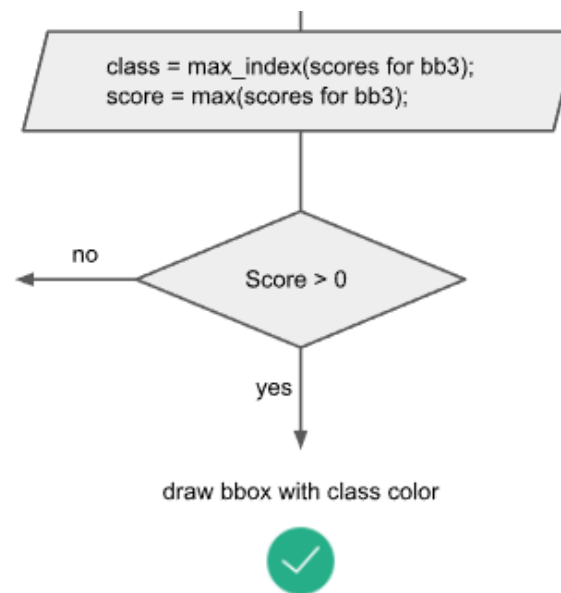
pg

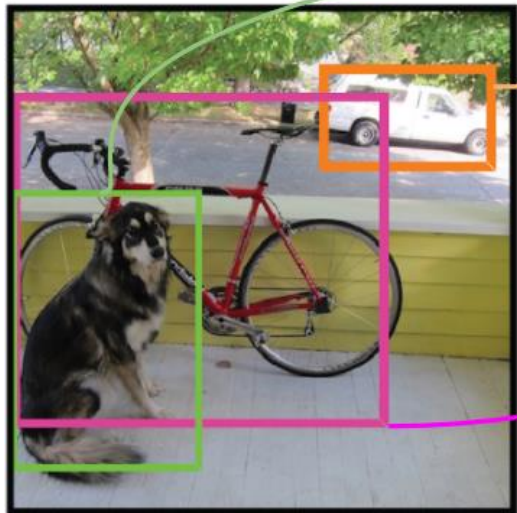
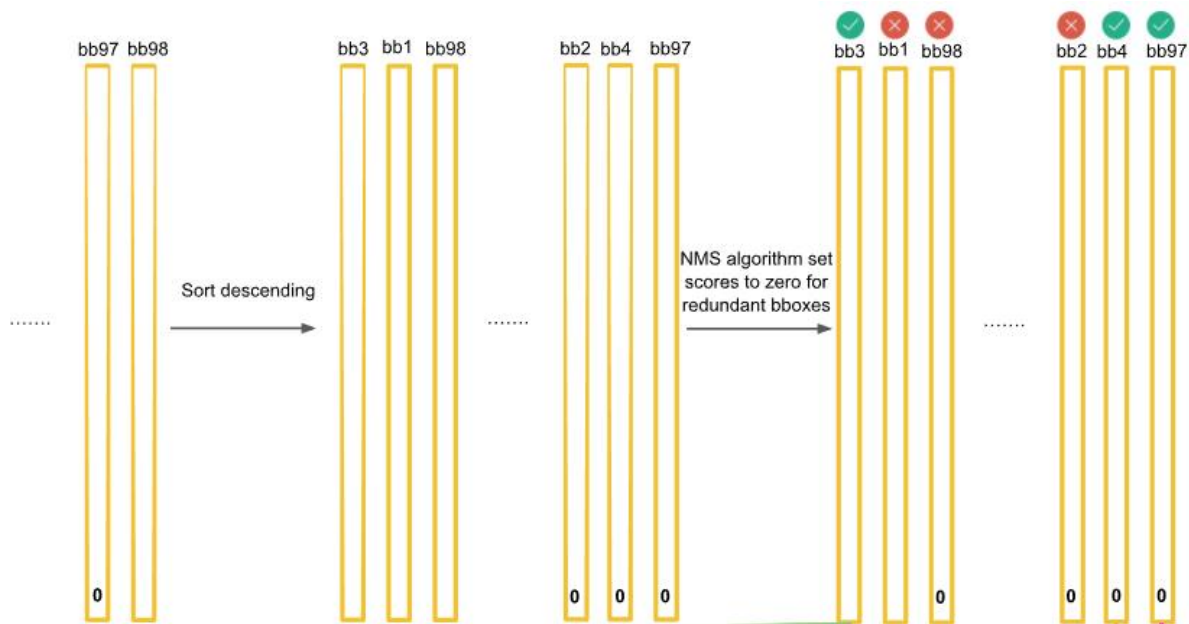
bb47	bb20	bb15	bb7
0.5	0	0.2	0.1





skip bbox





## 한계

R-CNN보다 현저히 낮은 Bound box 개수  
→ 복잡한 이미지에서는 낮은 정확도

작은 오브젝트 여러 개가 인접해 있을 때  
검출이 어려움



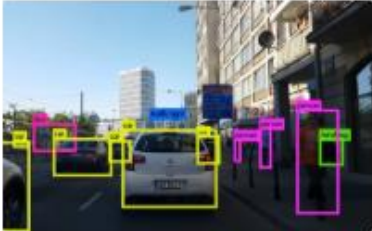


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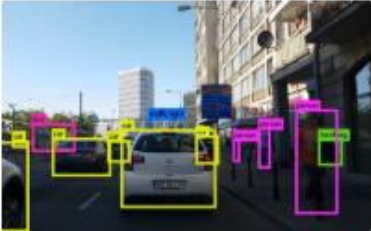


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## Project Code

Pytorch로 구현하는 코드 예제와 강의 제공  
구현은 가능할 것으로 예상...