

# You Only Look Once (YOLO)

- YOLO 모델의 기본 컨셉 :

이미지를  **$S \times S$  Grid Cell**로 나누고 Grid Cell별로  **$B$  개의 Bounding Box**를 예측합니다.

- YOLO 모델의 최종 Output :  **$S \times S \times (5 * B + C)$  ( $5 : x, y, w, h, \text{confidence}$ )**

예를 들어  $S=7, B=2, C=20$ 일 경우  $7 \times 7 \times 30$ 이 네트워크의 최종 Output이 됩니다.



Reference :  
<https://unsplash.com/photos/OKcmHlcthJI>

# (x, y, w, h, confidence)

- YOLO 모델의 최종 Output :  $S \times S \times (5 * B + C)$  (5 : x, y, w, h, confidence)

**x** : grid cell 내의 x의 위치 (0~1 사이의 값)

**y** : grid cell내의 y의 위치 (0~1 사이의 값)

**w** : 전체 이미지 대비의 width (0~1사이의 값)

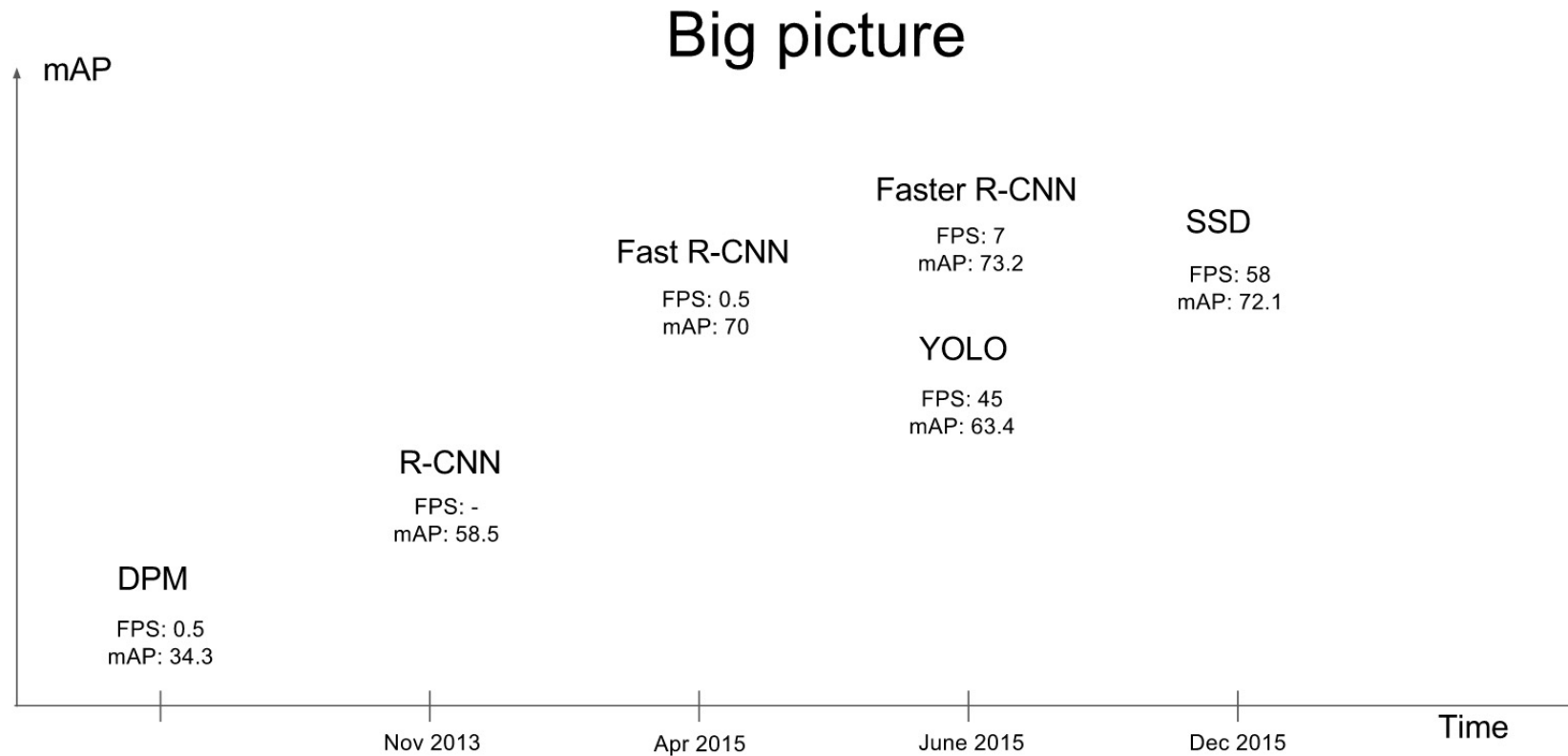
**h** : 전체 이미지 대비의 height (0~1 사이의 값)

**confidence** : 이미지 내에 Object가 있을 것이라고 확신하는 정도 (0~1 사이의 값)

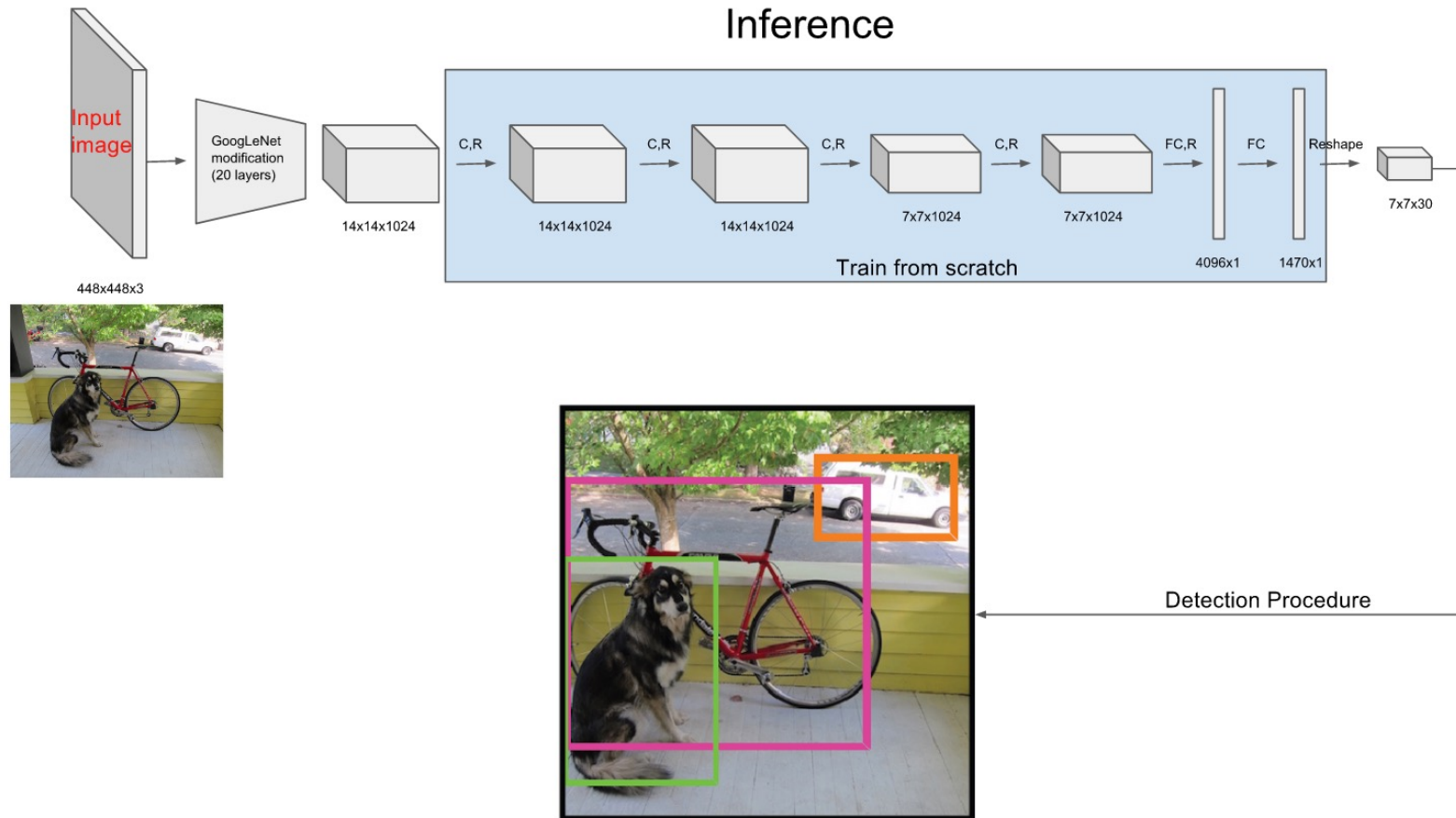


Reference :  
<https://unsplash.com/photos/OKcmHlcthJI>

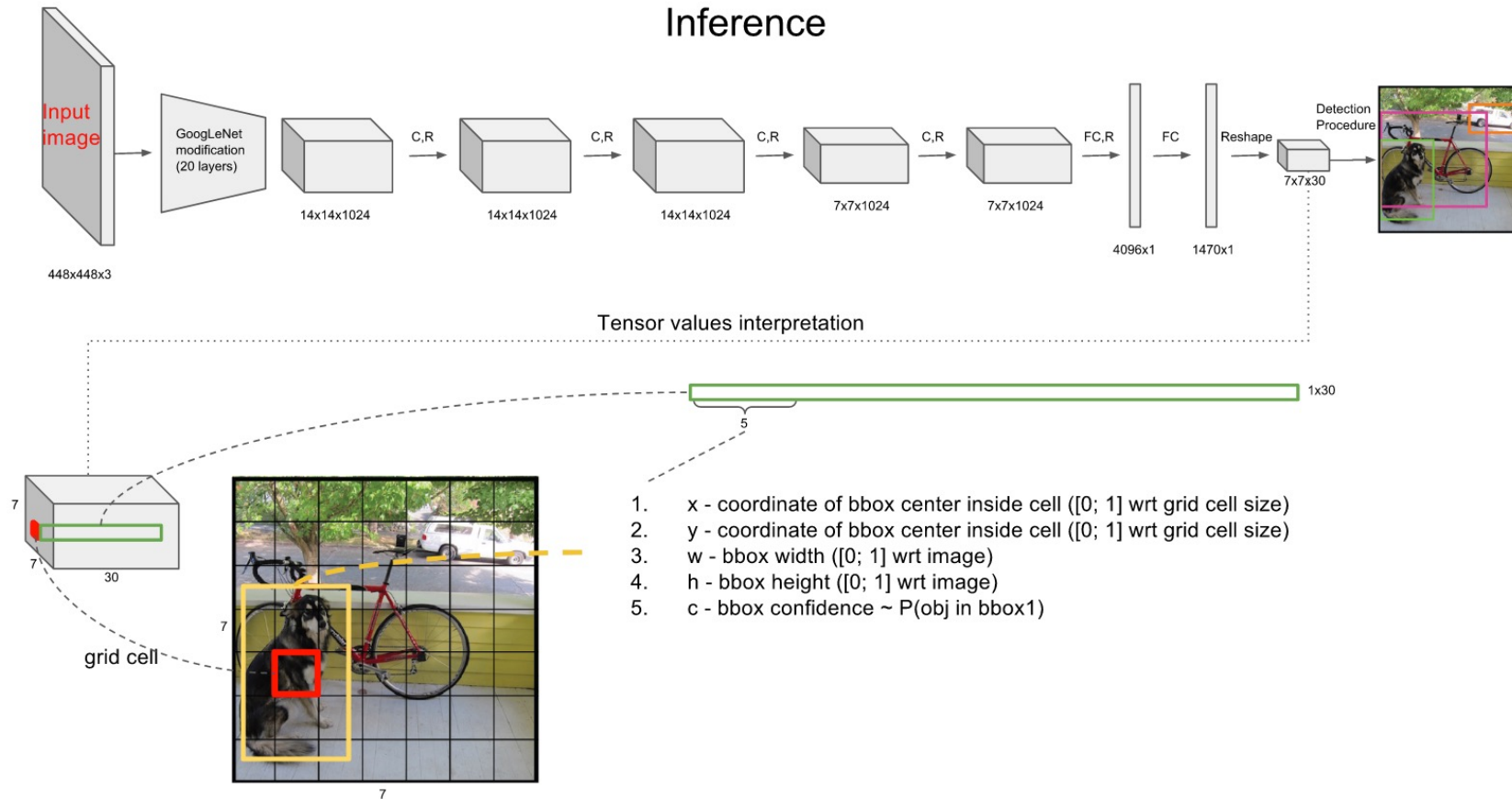
# YOLO



# YOLO

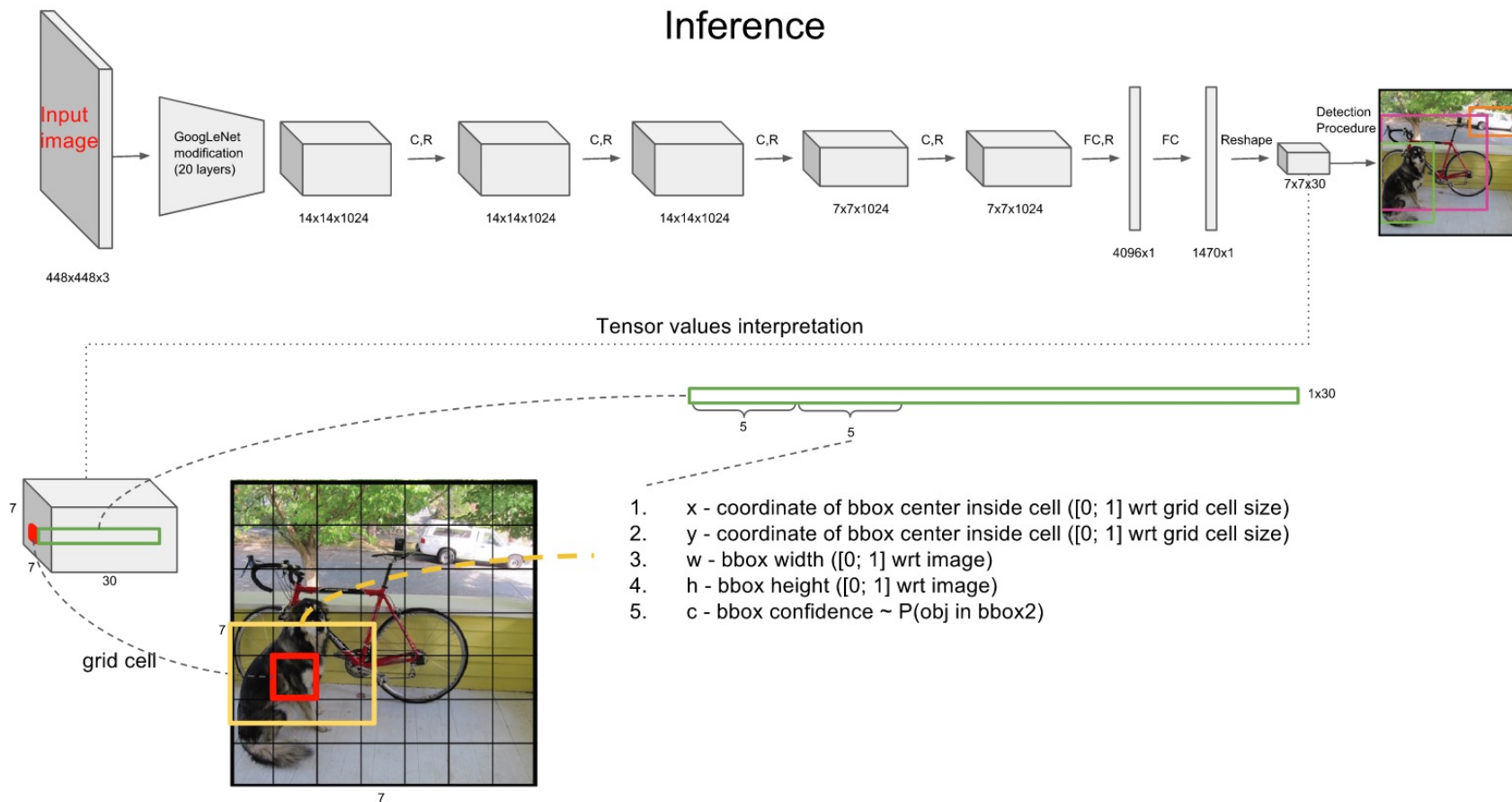


# YOLO

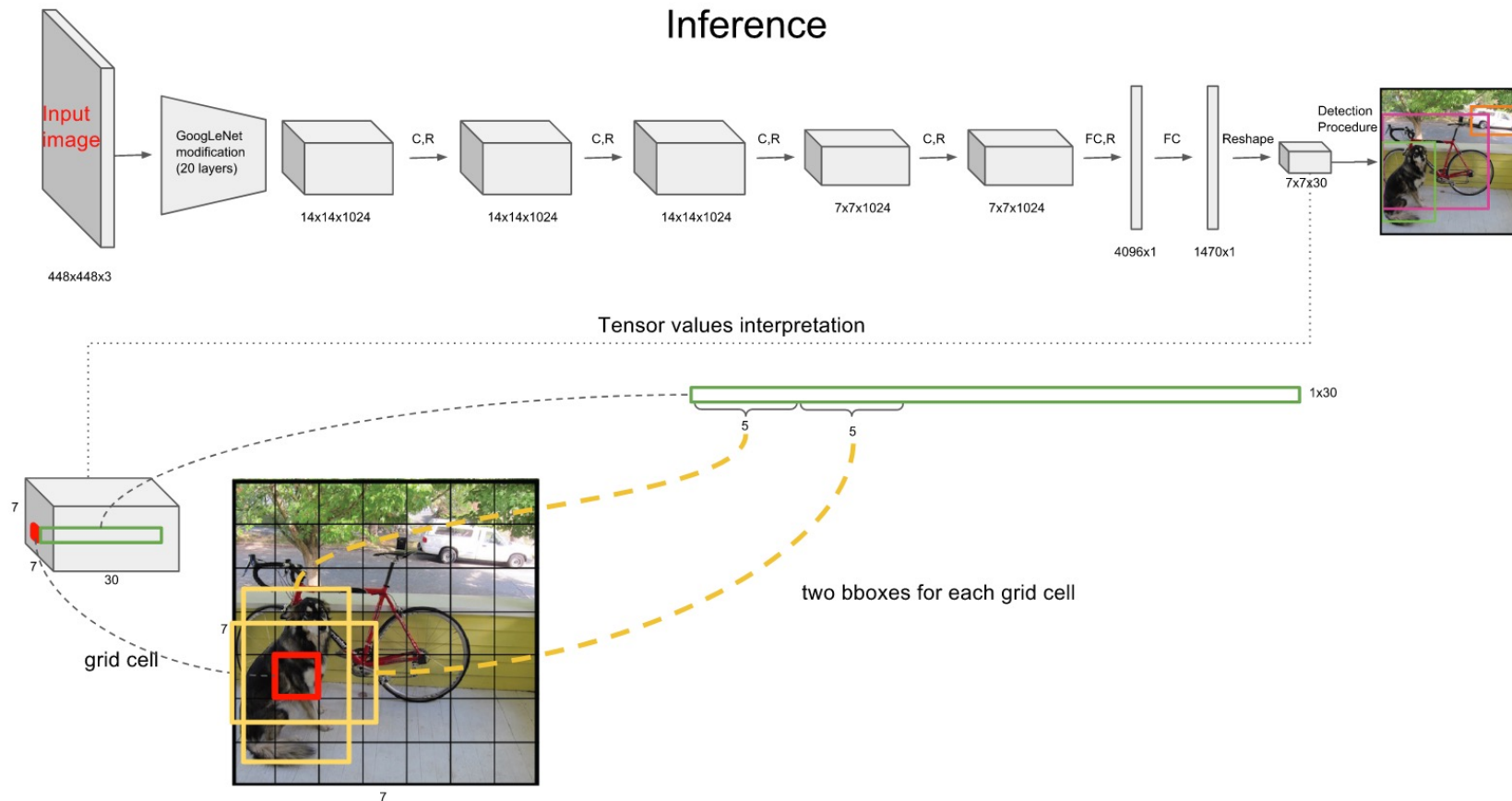




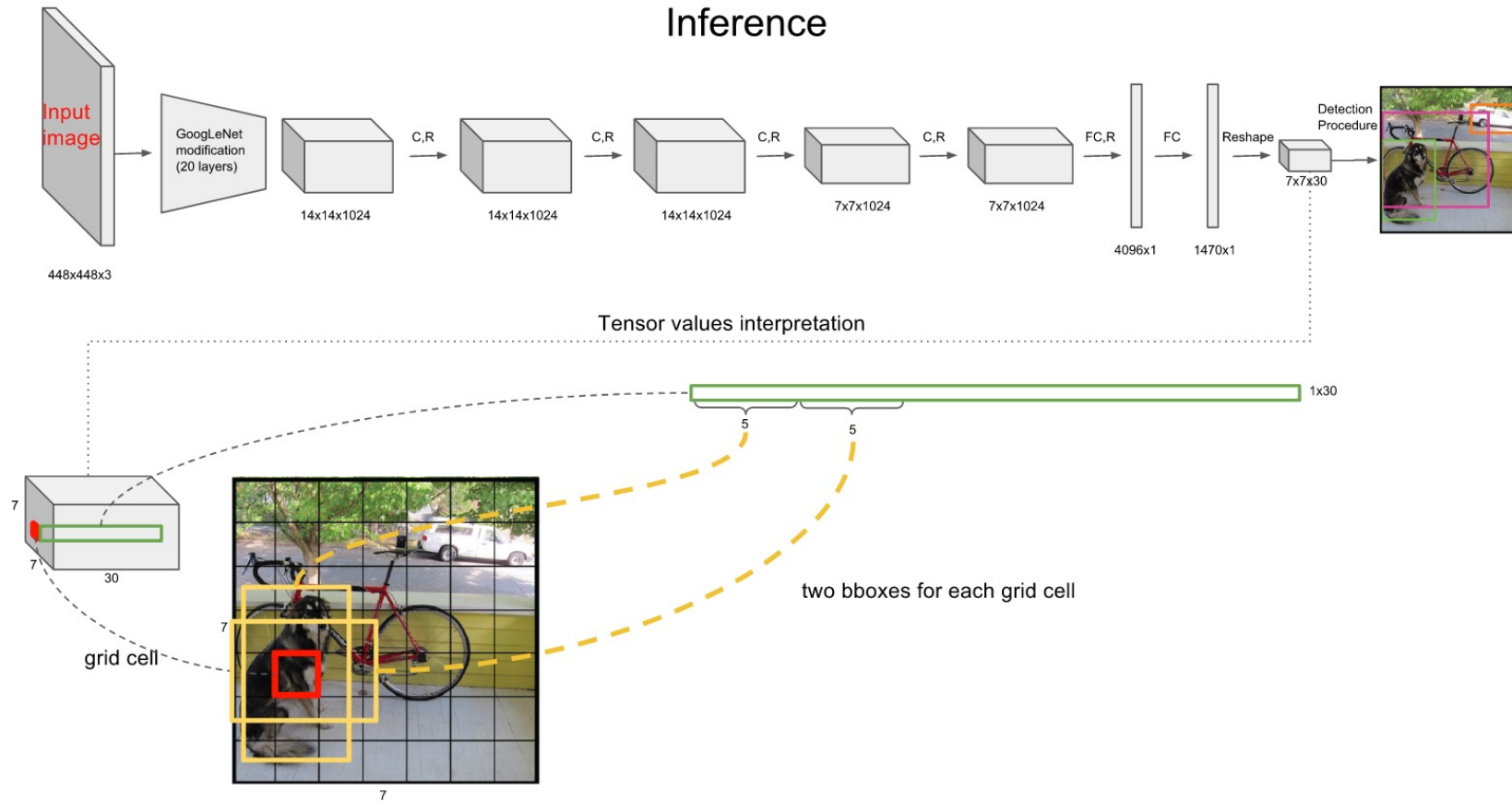
# YOLO



# YOLO

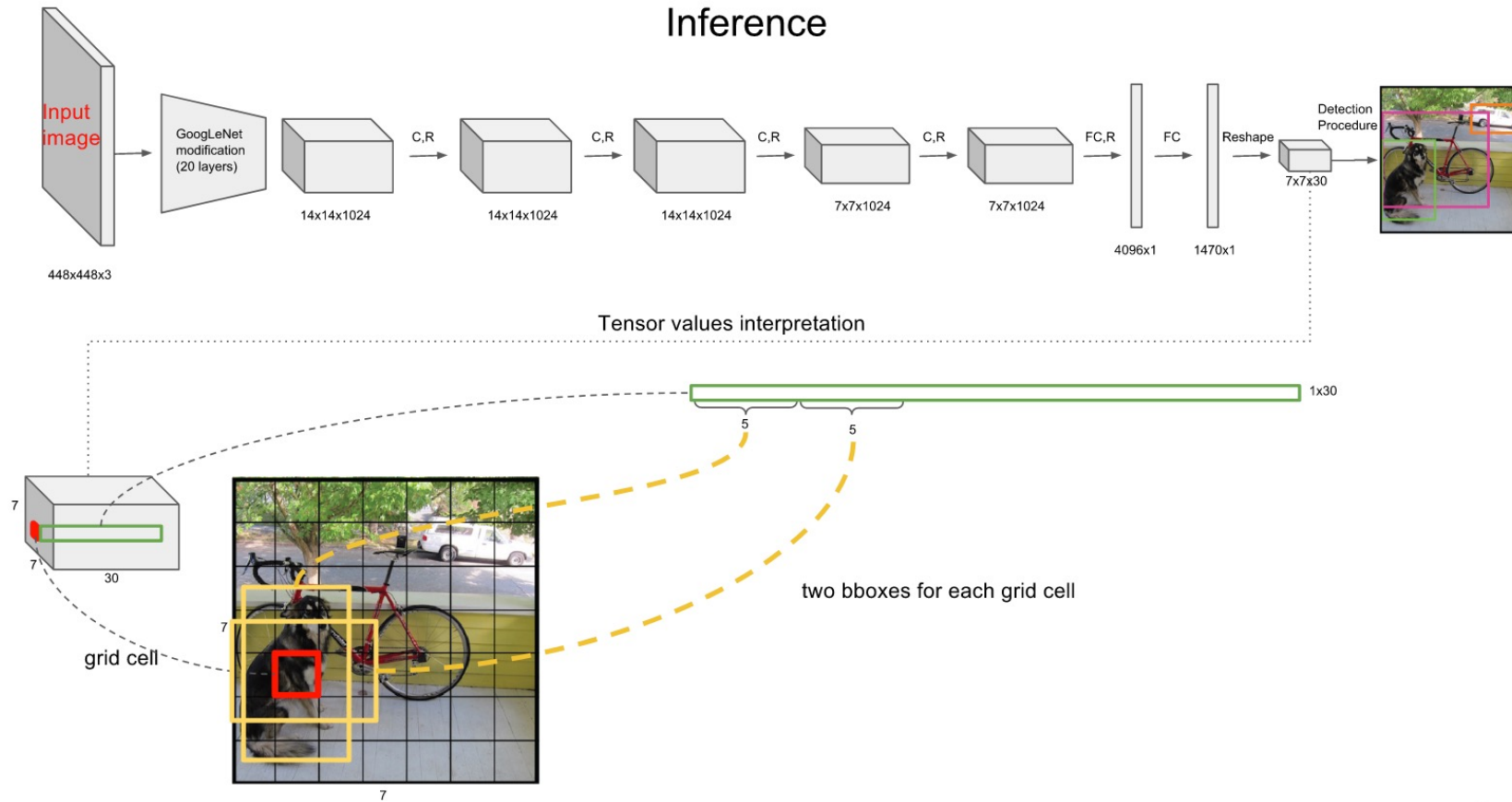


# YOLO

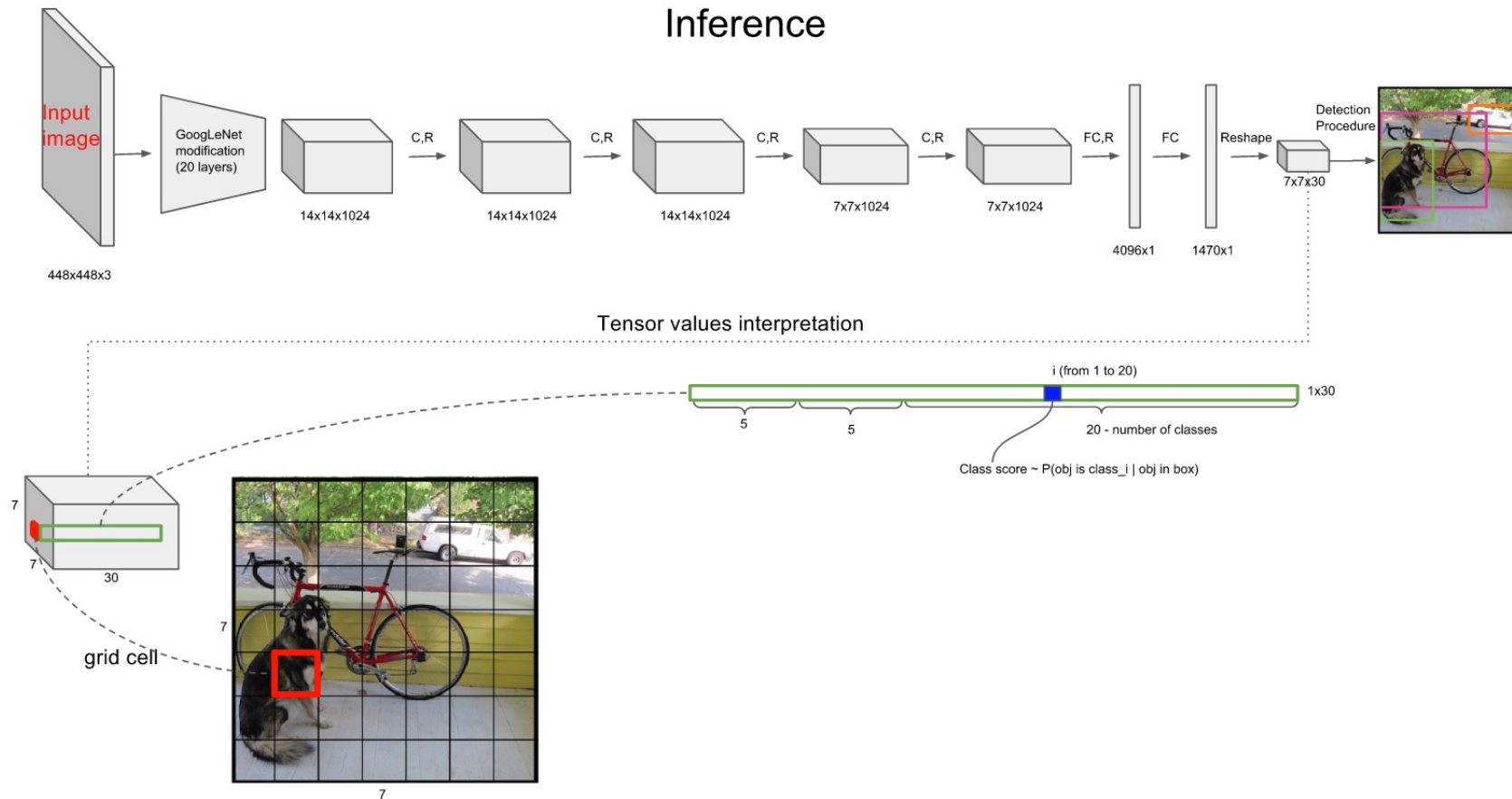




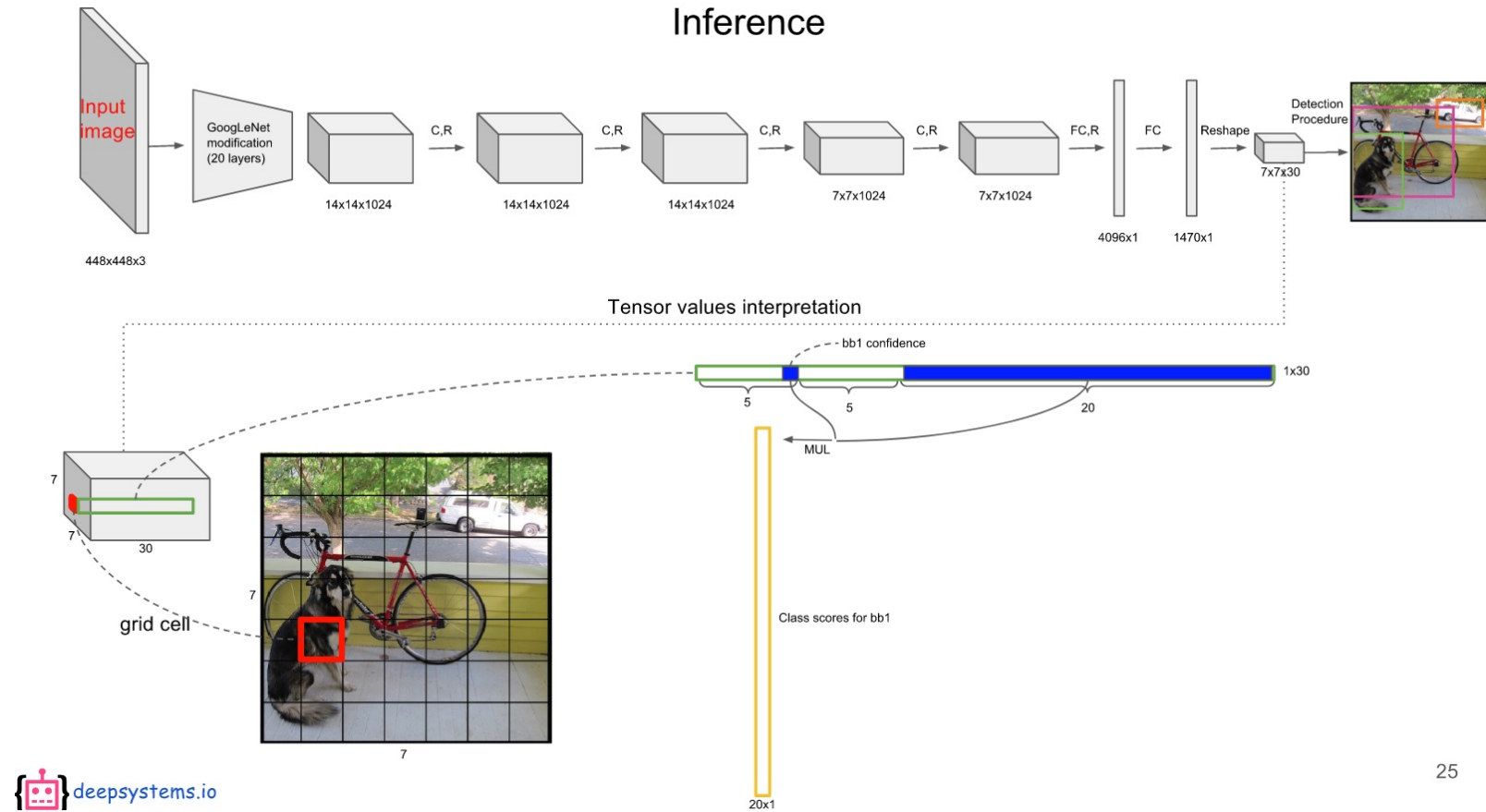
# YOLO



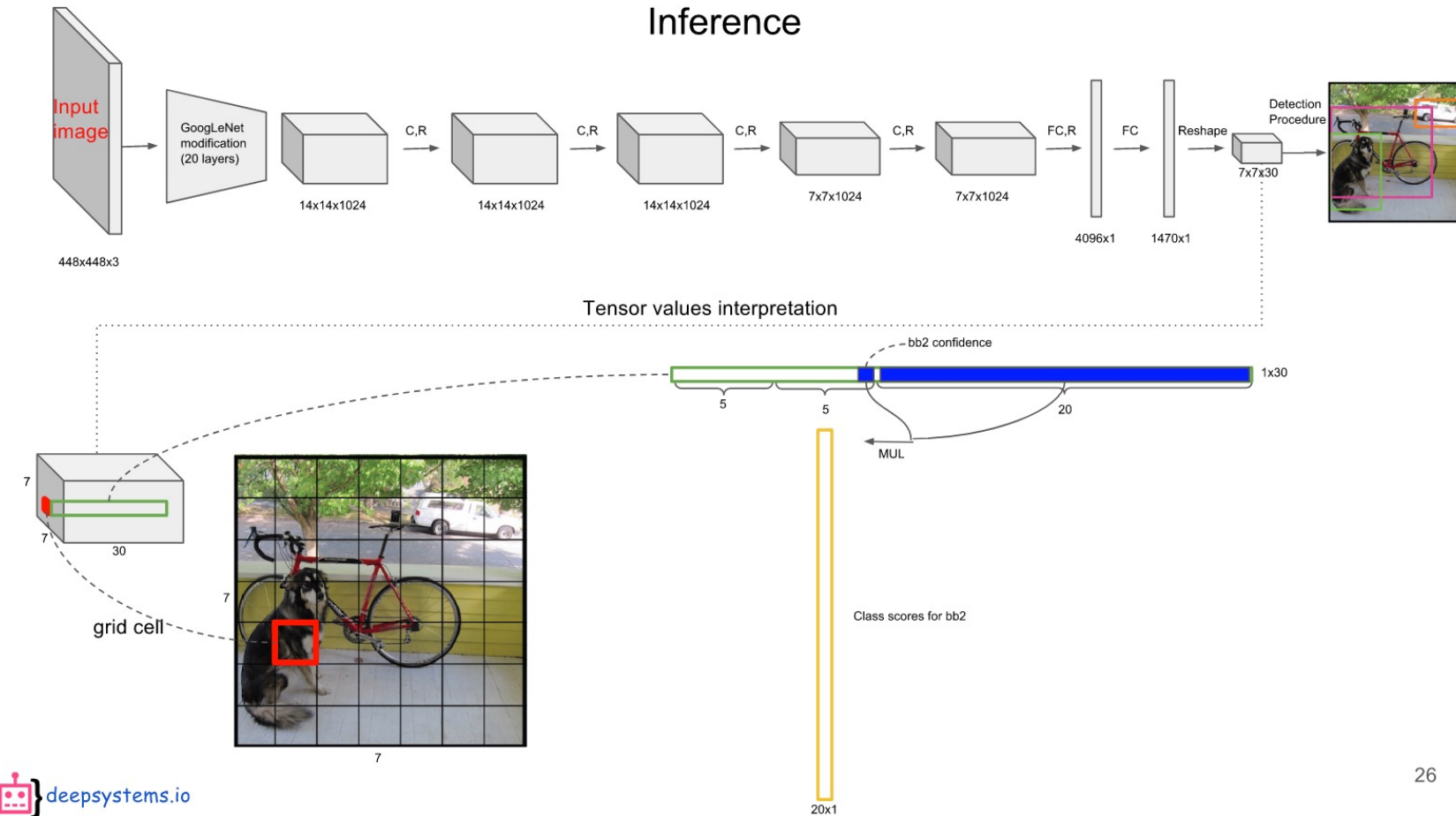
# YOLO



# YOLO

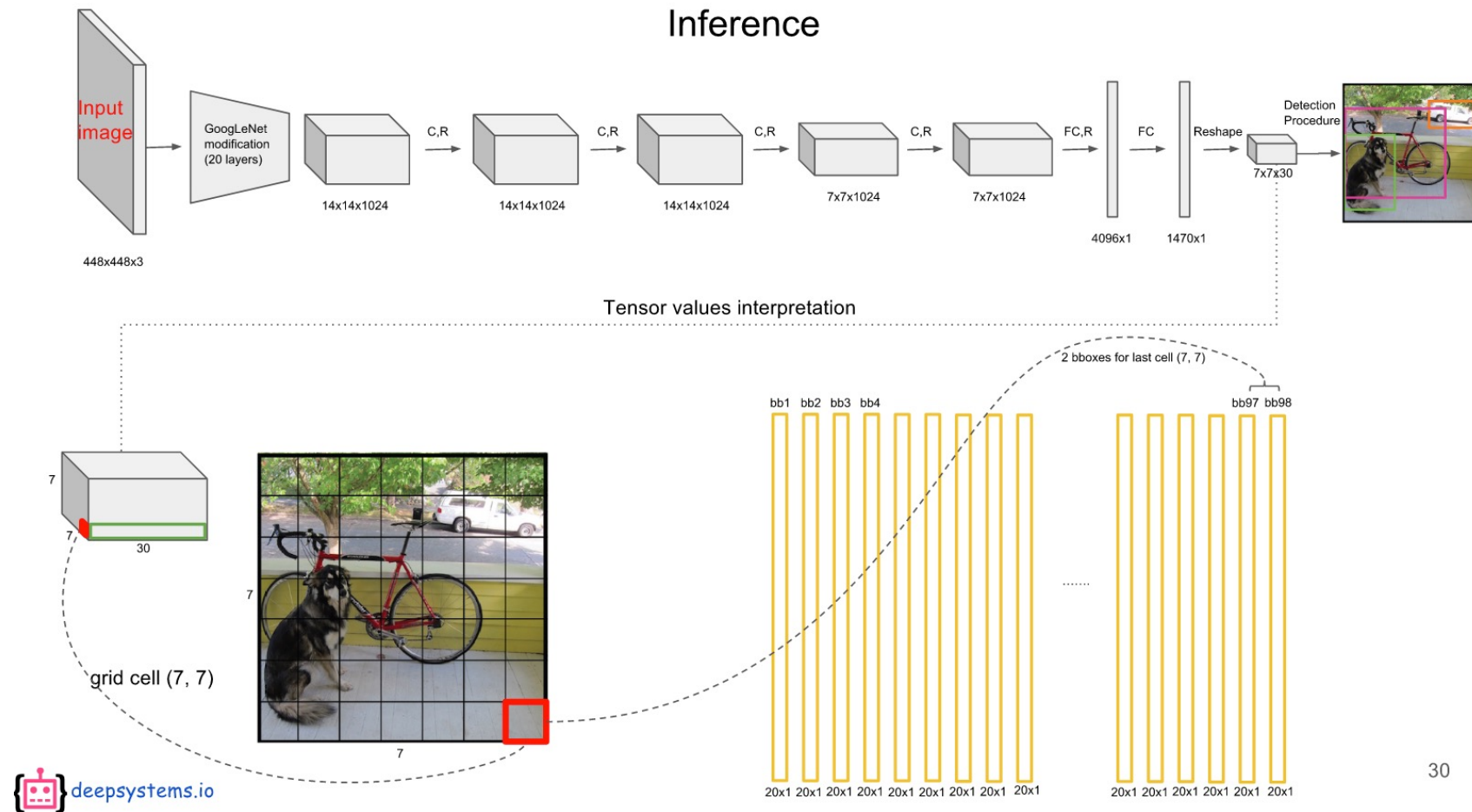


# YOLO



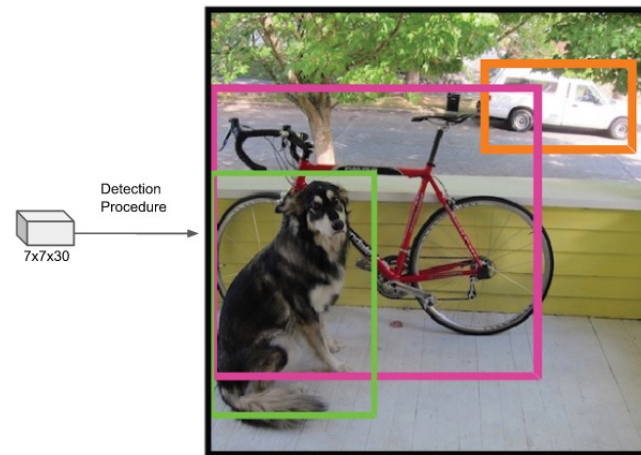
26

# YOLO



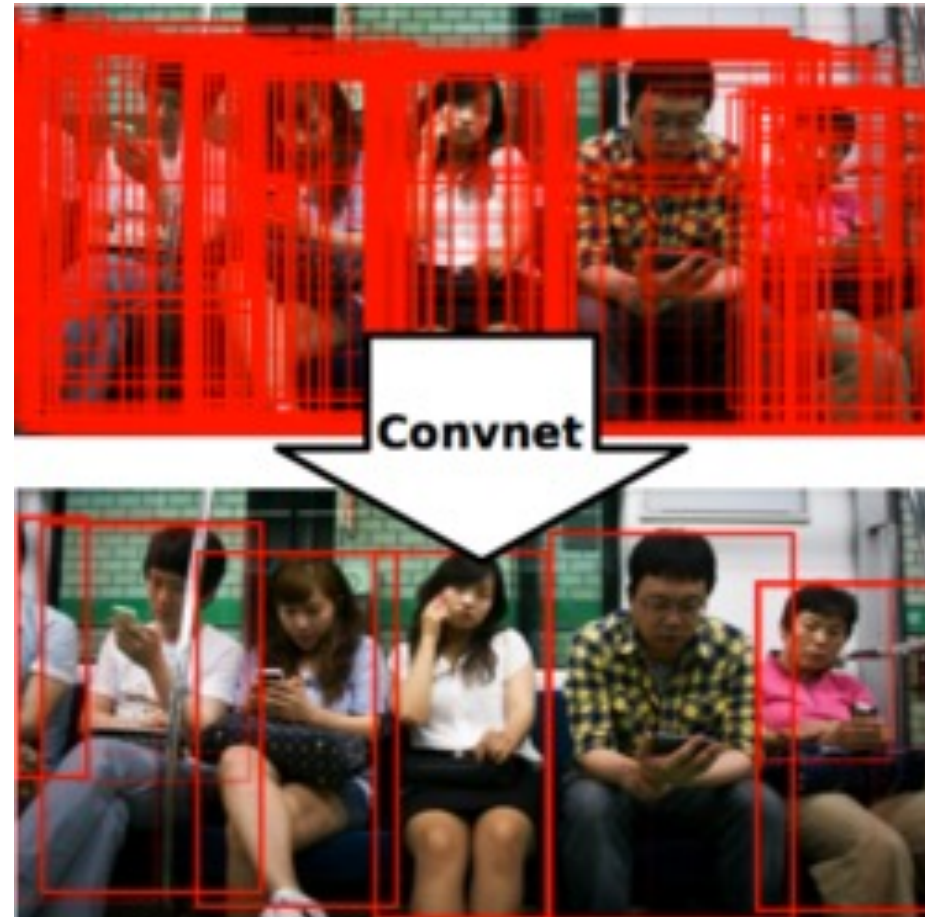
# YOLO

Look at detection procedure





# Non-Maximum Suppression



Reference :

<https://www.mpi-inf.mpg.de/departments/computer-vision-and-machine-learning/research/object-recognition-and-scene-understanding/learning-nms>

# Thank you!

---