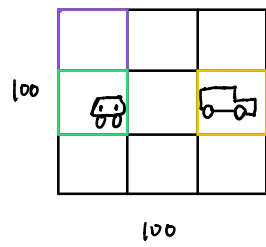
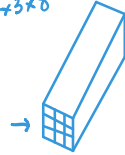


YOLO algorithm



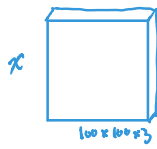
Target output:
 $3 \times 3 \times 8$



Labels for training

For each grid cell:

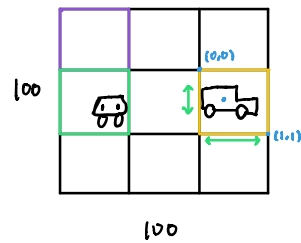
$$y = \begin{bmatrix} p_c \\ b_x \\ b_y \\ b_h \\ b_w \\ c_1 \\ c_2 \\ c_3 \end{bmatrix} \quad \begin{bmatrix} 0 \\ ? \\ ? \\ ? \\ ? \\ ? \\ ? \\ ? \end{bmatrix} \quad \begin{bmatrix} 1 \\ b_x \\ b_y \\ b_h \\ b_w \\ 0 \\ 1 \\ 0 \end{bmatrix} \quad \begin{bmatrix} 1 \\ b_x \\ b_y \\ b_h \\ b_w \\ 0 \\ 1 \\ 0 \end{bmatrix}$$



\rightarrow CONV \rightarrow MAX POOL $\rightarrow \dots \rightarrow$



$\frac{3 \times 3 \times 8}{19 \times 19 \times 8}$ (In Practice)



$$y = \begin{bmatrix} 1 \\ b_x \\ b_y \\ b_h \\ b_w \\ 0 \\ 1 \\ 0 \end{bmatrix} \quad \left. \begin{matrix} 0.4 \\ 0.3 \\ 0.9 \\ 0.5 \end{matrix} \right\} \begin{matrix} \text{between } 0 \text{ and } 1 \\ \text{Could be } > 1 \end{matrix}$$