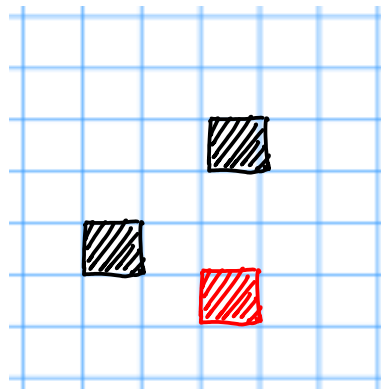
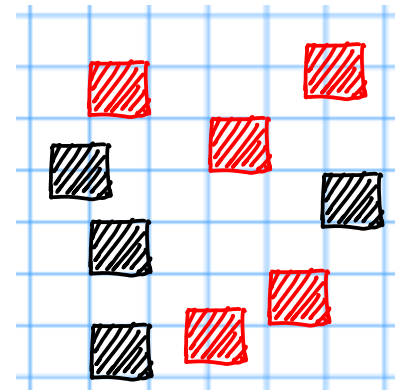
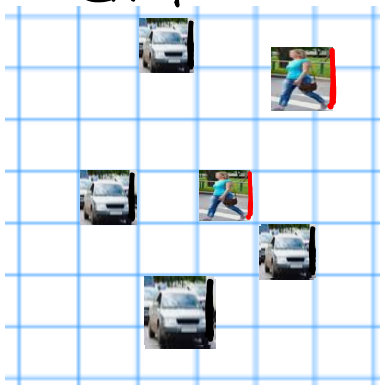
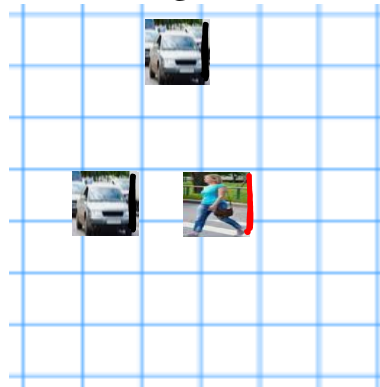
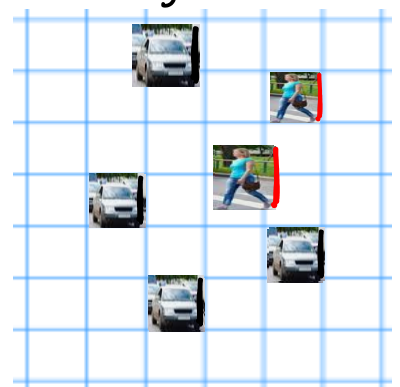
CAM₁ I₁(x,y)CAM₂ I₂(x,y)CAM₃ I₃(x,y)

... (1)

$$R = I_1 R + I_2 R + I_3 R ; \text{Prob}(I_1) = 1/3, \text{Prob}(I_2) = 1/6, \text{Prob}(I_3) = 1/2 \dots (2)$$

$$\text{Prob}(R) = \text{Prob}(I_1 R) + \text{Prob}(I_2 R) + \text{Prob}(I_3 R)$$

$$= \text{Prob}(I_1) \text{Prob}(R/I_1) + \text{Prob}(I_2) \text{Prob}(R/I_2) + \text{Prob}(I_3) \text{Prob}(R/I_3)$$

CAM₁ I₁(x,y)CAM₂ I₂(x,y)CAM₃ I₃(x,y)

$$I_1 R: \text{Prob}(I_1) \text{Prob}(R/I_1)$$

$$I_2 R: \text{Prob}(I_2) \text{Prob}(R/I_2)$$

$$I_3 R: \text{Prob}(I_3) \text{Prob}(R/I_3)$$

April 9 (Sat)

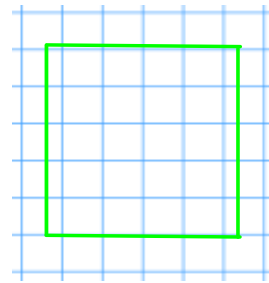
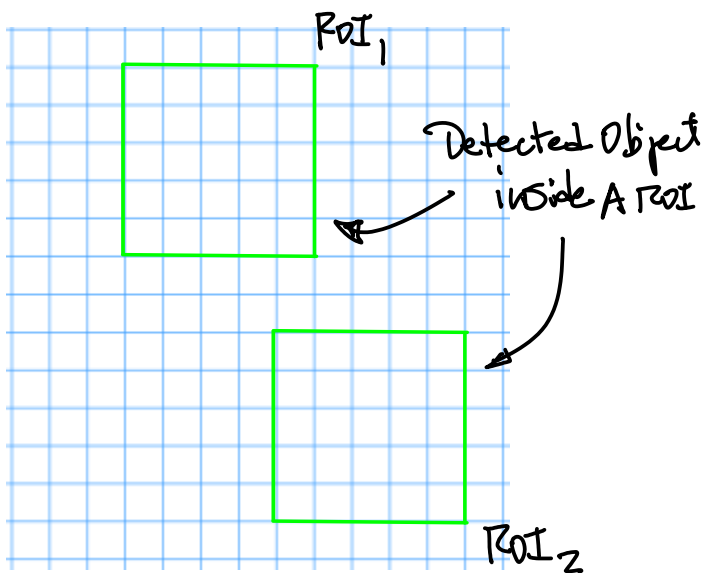
7-2

$$\Pr(\text{Class}_i | \text{Object}) * \Pr(\text{Object}) * \text{IOU}_{\text{pred}}^{\text{truth}} = \Pr(\text{Class}_i) * \text{IOU}_{\text{pred}}^{\text{truth}} \dots (1)$$

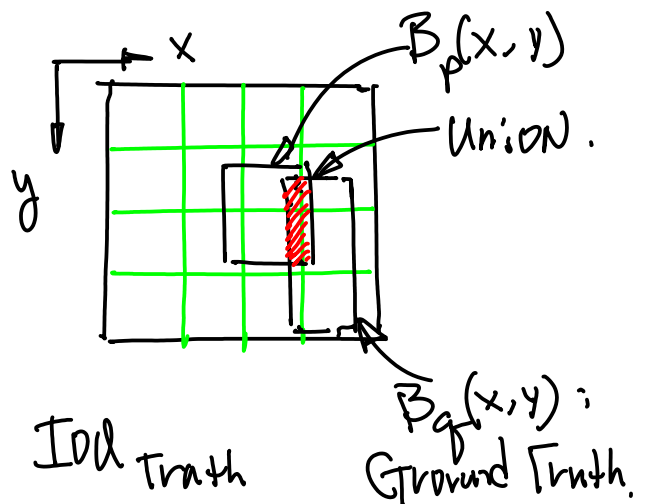
Decompose Eqn (1) Above, Consider Detection of A Class, e.g. A Car.

$$\Pr(\text{Class} | \text{Object}) \Pr(\text{Object}) = \Pr(\text{Class}), \text{or}$$

$$\Pr(\text{Class}) = \Pr(\text{Class} | \text{Object}) \Pr(\text{Object})$$



From my 258 Notes, April 8, 21
5. IOU (Intersection of Union)



$$IDU = \begin{cases} 1 & \text{if } T_p(x,y) = B_q(x,y) \\ 0 & \text{o/w} \end{cases} \dots (1)$$

Example: Illustration of IDU

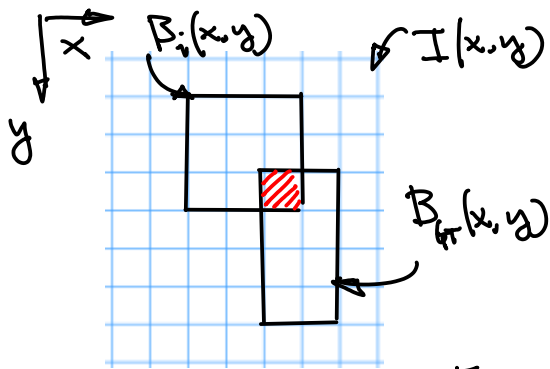


Fig.5

Intersection of Union

$$IDU = \frac{\text{Intersection}}{\text{Union}}$$

$$IDU = \frac{\text{Intersection}}{\text{Union}}$$

$$= \frac{B_i(x,y) B_j(x,y)}{B_i(x,y) + B_j(x,y) - B_i(x,y) B_j(x,y)}$$

$$= \frac{1}{1 + 1 - 1} = \frac{1}{1} = 1$$

(END)