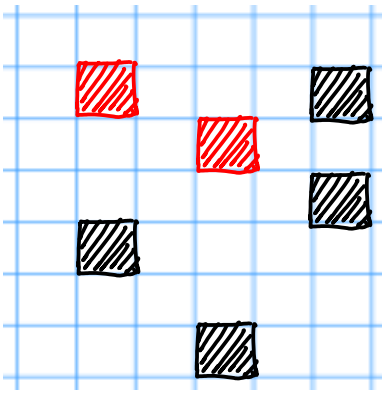
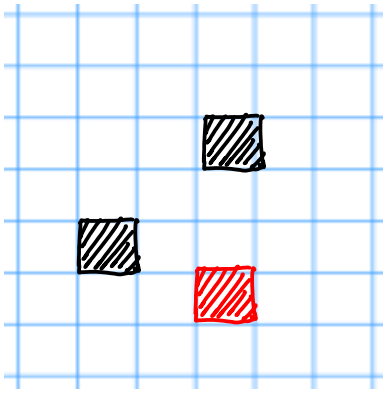
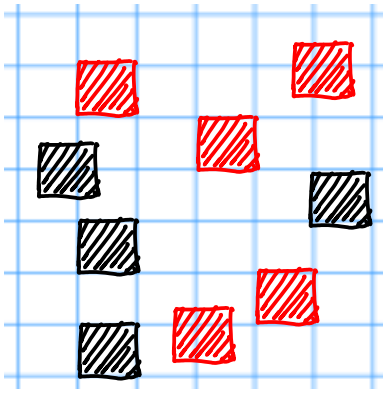


CAM_1 $I_1(x,y)$



CAM_2 $I_2(x,y)$



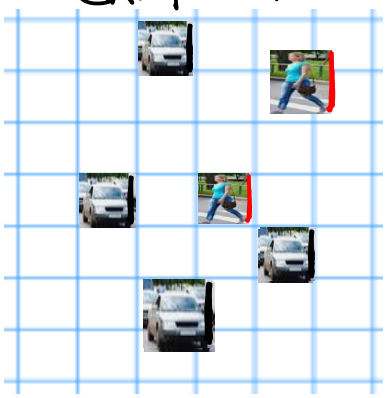
CAM_3 $I_3(x,y)$

$$R = I_1R + I_2R + I_3R \quad ; \quad Prob(I_1) = 1/3, Prob(I_2) = 1/6, Prob(I_3) = 1/2 \quad \ldots(2)$$

$$Prob(R) = Prob(I_1R) + Prob(I_2R) + Prob(I_3R)$$

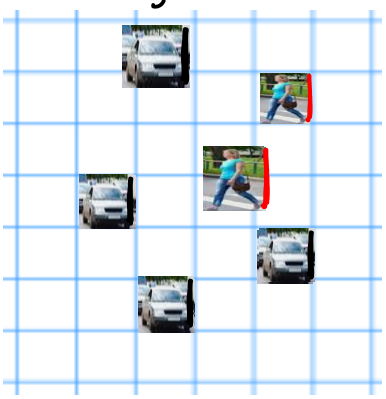
$$= Prob(I_1)Prob(R/I_1) + Prob(I_2)Prob(R/I_2) + Prob(I_3)Prob(R/I_3)$$

CAM_1 $I_1(x,y)$



CAM_2 $I_2(x,y)$

CAM_3 $I_3(x,y)$



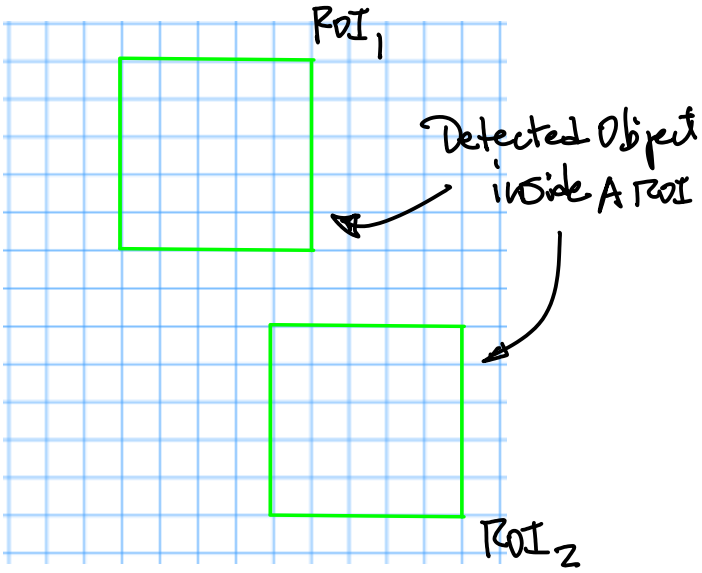
I_1R: $Prob(I_1)Prob(R/I_1)$ I_2R: $Prob(I_2)Prob(R/I_2)$ I_3R: $Prob(I_3)Prob(R/I_3)$

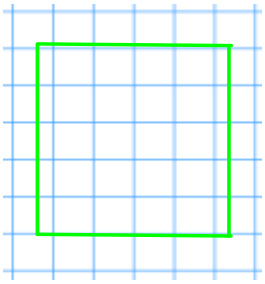
$$\Pr(\text{Class}_i|\text{Object}) * \Pr(\text{Object}) * \text{IOU}^{\text{truth}}_{\text{pred}} = \Pr(\text{Class}_i) * \text{IOU}^{\text{truth}}_{\text{pred}} \quad \cdots (1)$$

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

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

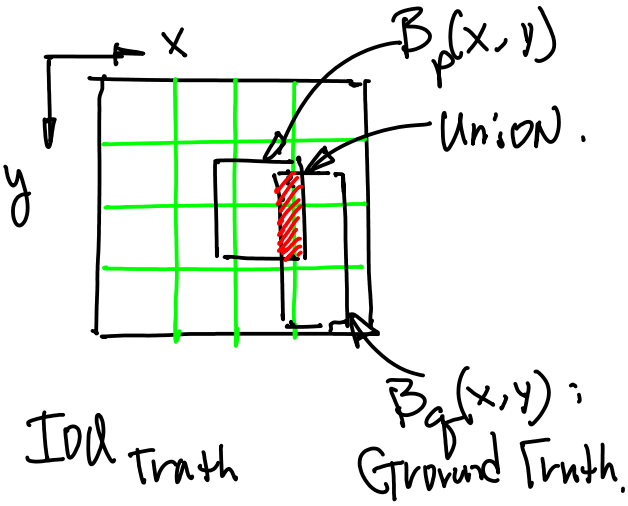
$\text{Prob}(\text{Class}) = \text{Prob}(\text{Class}|\text{Object})\text{Prob}(\text{Object})$





From my 258 Notes, April 8, 21

5. IOU (Intersection of Union)



$$I_{DM} = \begin{cases} 1 & B_p(x,y) = B_q(x,y) \\ [0,1) & \text{o/w} \end{cases} \quad \ldots (1)$$