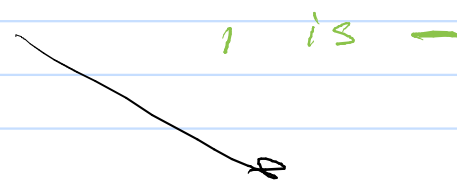
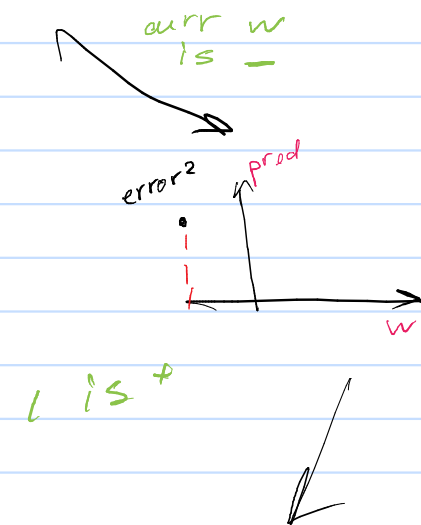
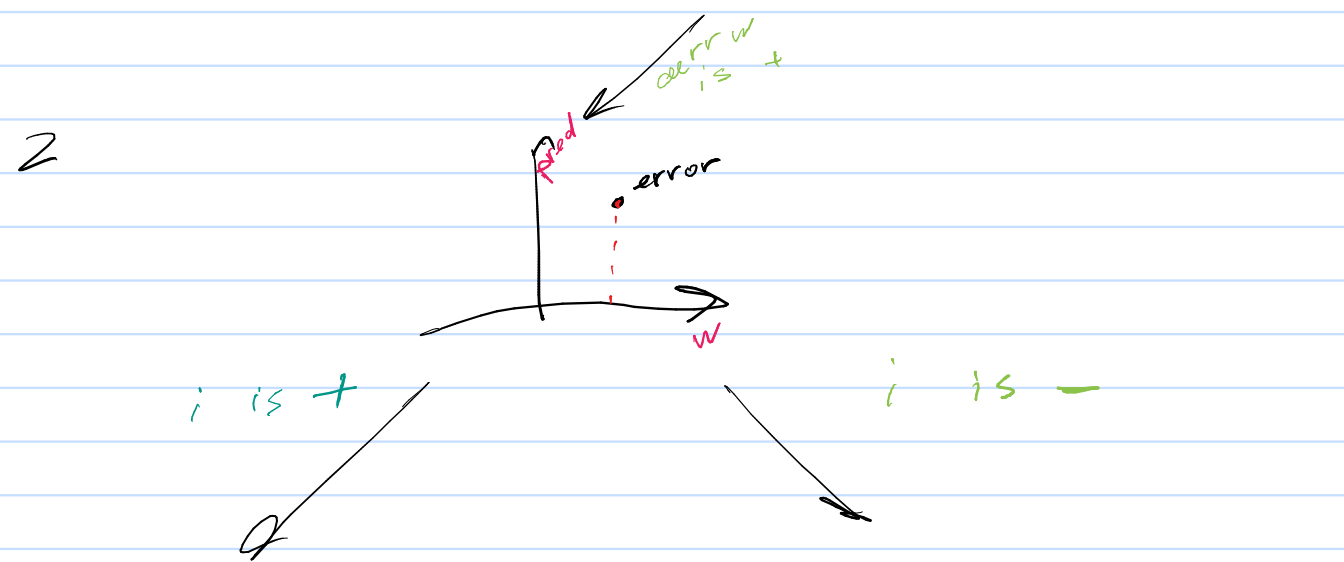


1. Step 1 -  $\text{error}^2(w) = (\text{pred} - \text{ideal}_w)^2$  is non-0.

2



$$\text{error}^2(w) = (i \cdot w - \text{truth})^2$$

$$\text{error}^2(w) = (i \cdot w - \text{truth})^2$$

$$\text{error}'(w) = (i \cdot w - \text{truth}) \cdot i$$

$$\text{error}^2(w) = (\text{truth} - i \cdot w)^2$$

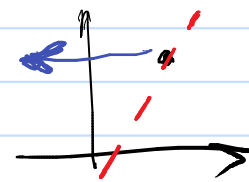
$$\text{error}'(w) = (\text{truth} - i \cdot w) \cdot (-i) = \text{the same}$$

$$w_{\text{new}} = w - \lambda \cdot \text{error}'(w)$$

$i \cdot w$  is +  
 $(i \cdot w - \text{truth})$  is bigger -  
 $(i \cdot w - \text{truth})$  is smaller +  
 $(\text{truth} - i \cdot w)$  is bigger +  
 $(\text{truth} - i \cdot w)$  is smaller -  
 $(i \cdot w - \text{truth}) \cdot i$  is bigger -  
 $(i \cdot w - \text{truth}) \cdot i$  is smaller +  
 $(\text{truth} - i \cdot w) \cdot (-i)$  is bigger -  
 $(\text{truth} - i \cdot w) \cdot (-i)$  is smaller +

we need to decr

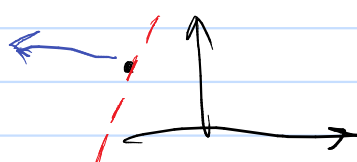
It means that  $i$  is curr  $w$  is + and  $i$  is - (the pixel is activation OR response from universe on your action is you did mistake - you ALWAYS have to decr. your current weights, no matter what is the truth.



$i \cdot w$  is -  
 $(i \cdot w - \text{truth})$  is bigger -  
 $(i \cdot w - \text{truth}) \cdot i$  is bigger +  
 $(\text{truth} - i \cdot w)$  is bigger -  
 $(\text{truth} - i \cdot w) \cdot (-i)$  is bigger +

we need to decr

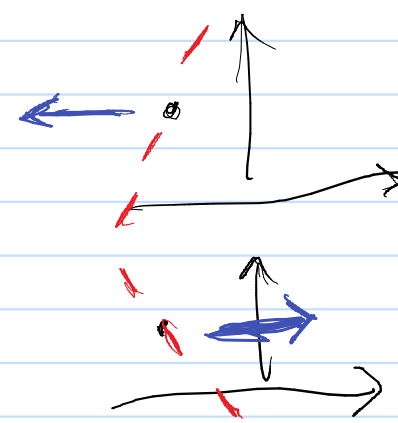
you configured yourself in "react negatively on positive things" mode . . .



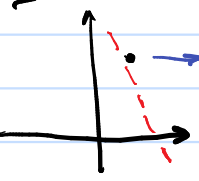
$i \cdot w$  is +

$(i \cdot w - \text{truth})$  is bigger -  
 $(i \cdot w - \text{truth})$  is smaller +  
 $(\text{truth} - i \cdot w)$  is bigger +  
 $(\text{truth} - i \cdot w)$  is smaller -  
 $(i \cdot w - \text{truth}) \cdot i$  is bigger -  
 $(i \cdot w - \text{truth}) \cdot i$  is smaller +  
 $(\text{truth} - i \cdot w) \cdot (-i)$  is bigger +  
 $(\text{truth} - i \cdot w) \cdot (-i)$  is smaller -

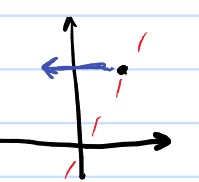
+



means



means



if we incr  $w$  - the  $\text{error}^2(w)$  becomes smaller, that's what we need

we need to decr  $w$