

## HANDOUT6:

For hidden layer

neuron z\_1:  $\text{sigmoid}(\text{sum}(1*0+0.6*2+0.8*1+0*0)) = \text{sigmoid}(2) = 0.88$

neuron z\_2:  $\text{sigmoid}(\text{sum}(1*0+0.6*1+0.8*2+0*3)) = \text{sigmoid}(2.2) = 0.90$

neuron z\_1:  $\text{sigmoid}(\text{sum}(1*-1+0.6*0+0.8*2+0*1)) = \text{sigmoid}(0.6) = 0.64$

output layer

neuron y\_1 =  $\text{sigmoid}(\text{sum}(1*-1+0.88*-1+0.9*1+0.64*2)) = \text{sigmoid}(0.3) = 0.57$

Loss Function =  $\frac{1}{2} (t-y)^2$

for each weight, we will take derivations:

$dE/dw$ .

You can follow the formula given in the above examples.