Toutk = (out1, out2, out3)

targk = (arg1, arg2, arg3)

Thidj = (hid1, hid2, hid3, hid4, hid5, hid6, hid7)

Wjk = ()

𝑔(𝐸,𝑊𝑗𝑘)=(𝑇𝑜𝑢𝑡𝑘−𝑡𝑎𝑟𝑔𝑘)∙𝑇𝑜𝑢𝑡𝑘∙(1−𝑇𝑜𝑢𝑡𝑘)∙𝑇ℎ𝑖𝑑𝑗

𝑔(𝐸,𝑊𝑗𝑘)= [3x1] \* [3x1] \* [3x1] \* [7x1]

𝑔(𝐸,𝑊𝑗𝑘) = (o\_activated-t) \* o\_activated T \* (1-o\_activated) \* h\_activated T

𝑔(𝐸,𝑊𝑗𝑘)= [3x1] \* [3x1]T \* [3x1] \* [7x1]T

𝑔(𝐸,𝑊𝑗𝑘)= [3x1] \* [1x3] \* [3x1] \* [1x7]

𝑔(𝐸,𝑊𝑗𝑘)= [3x3] \* [3x1] \* [1x7]

𝑔(𝐸,𝑊𝑗𝑘)= [3x1] \* [1x7]

𝑔(𝐸,𝑊𝑗𝑘)= [3x7]

(o\_activated-t):

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| o\_activated | t | 1 | (o\_activated-t) | (1-o\_activated) |
| out1 | arg1 | 1 | out1 – arg1 | 1 – out1 |
| out2 | arg2 | 1 | out2 – arg2 | 1 – out2 |
| out3 | arg3 | 1 | out3 – arg3 | 1 – out3 |

𝑔(𝐸,𝑊𝑗𝑘)=(𝑇𝑜𝑢𝑡𝑘−𝑡𝑎𝑟𝑔𝑘)∙𝑇𝑜𝑢𝑡𝑘∙(1−𝑇𝑜𝑢𝑡𝑘)∙𝑇ℎ𝑖𝑑𝑗

𝑔(𝐸,𝑊𝑗𝑘)= [3x1] \* [3x1] \* [3x1] \* [7x1]

𝑔(𝐸,𝑊𝑗𝑘) = (o\_activated-t) \* o\_activated T \* (1-o\_activated) \* h\_activated T

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| o\_activated | t | 1 | (o\_activated-t) | (1-o\_activated) |
| out1 | arg1 | 1 | out1 – arg1 | 1 – out1 |
| out2 | arg2 | 1 | out2 – arg2 | 1 – out2 |
| out3 | arg3 | 1 | out3 – arg3 | 1 – out3 |

𝑔(𝐸,𝑏𝑖𝑎𝑠𝑂) = Σ𝑘[(𝑇𝑜𝑢𝑡𝑘−𝑡𝑎𝑟𝑔𝑘)∙𝑇𝑜𝑢𝑡𝑘∙(1−𝑇𝑜𝑢𝑡𝑘)]

𝑔(𝐸,𝑏𝑖𝑎𝑠𝑂) = Σ𝑘[(o\_activated-t)\*o\_activated\*(1-o\_activated)]

𝑔(𝐸,𝑇ℎ𝑖𝑑𝑗) = Σ𝑘(𝑇𝑜𝑢𝑡𝑘−𝑡𝑎𝑟𝑔𝑘)∗𝑇𝑜𝑢𝑡𝑘∗(1−𝑇𝑜𝑢𝑡𝑘)∗𝑊𝑗𝑘

𝑔(𝐸,𝑇ℎ𝑖𝑑𝑗) = Σ𝑘[(o\_activated-t)\*o\_activated\*(1-o\_activated)\*w\_hidden]

𝑔(𝐸,𝑤𝑖𝑗) = Σ𝑘[(𝑇𝑜𝑢𝑡𝑘−𝑡𝑎𝑟𝑔𝑘)∙𝑇𝑜𝑢𝑡𝑘∙(1−𝑇𝑜𝑢𝑡𝑘)∙𝑊𝑗𝑘]∙𝑇ℎ𝑖𝑑𝑗∙(1−𝑇ℎ𝑖𝑑𝑗)∙𝑖𝑛𝑝𝑖

𝑔(𝐸,𝑤𝑖𝑗) = 𝑔(𝐸,𝑇ℎ𝑖𝑑𝑗)\*h\_activated\*(1-h\_activated)\*f\_input

𝑔(𝐸,𝑏𝑖𝑎𝑠𝐻)=Σ𝑗[Σ𝑘[(𝑇𝑜𝑢𝑡𝑘−𝑡𝑎𝑟𝑔𝑘)∙𝑇𝑜𝑢𝑡𝑘∙(1−𝑇𝑜𝑢𝑡𝑘)∙𝑊𝑗𝑘]∗Thid𝑗∗(1−Thid𝑗)]

𝑔(𝐸,𝑏𝑖𝑎𝑠𝐻)=Σ𝑗[𝑔(𝐸,𝑇ℎ𝑖𝑑𝑗)∗h\_activated∗(1−h\_activated)]