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Period 4

05/19/16

NOT

f(x)=

error 3.1811273409273606e-18

AND

f(x) =

error 6.956764125210043e-20

OR

f(x) =

error 2.532950706639183e-29

---------------------------- CODE -----------------------------

import sys, math, random, time

startTime = time.clock()

#where input = 0 and output = 1

def notFunc1(w, b):

output = 1 / (1 + (math.e)\*\* ((-w\*(0)) + b))

return output

#where input = 1 and output = 0

def notFunc2(w, b):

output = 1 / (1 + (math.e)\*\* ((-w\*(1)) + b))

return output

def NOT():

error = math.inf

w = math.inf

b = math.inf

while (error > .00001):

negative = random.randint(-1,1)

w = random.random() \* (100) \* negative

b = random.random() \* 100 \* negative

first = notFunc1(w, b) - 1

second = notFunc2(w, b) - 0

error = (first\*first) + (second\*second)

print ("Current W", w)

print ("Current B", b)

print ("error", error)

def andFunc1(w, b):

output = 1 / (1 + (math.e)\*\* (-w\*(0+0) + b))

return output

def andFunc2(w, b):

output = 1 / (1 + (math.e)\*\* ((-w\*(1+0)) + b))

return output

def andFunc3(w, b):

output = 1 / (1 + (math.e)\*\* ((-w\*(0+1)) + b))

return output

def andFunc4(w, b):

output = 1 / (1 + (math.e)\*\* ((-w\*(1+1)) + b))

return output

def AND():

error = math.inf

w = math.inf

b = math.inf

while (error > .00001):

negative = random.randint(-1,1)

w = random.random() \* (100) \* negative

b = random.random() \* 100 \* negative

first = orFunc1(w, b) - 0

second = orFunc2(w, b) - 1

third = orFunc2(w, b) - 1

fourth = orFunc2(w, b) - 1

error = (first\*first) + (second\*second) + (third\*third) + (fourth\*fourth)

print ("Current W", w)

print ("Current B", b)

print ("error", error)

def orFunc1(w, b):

output = 1 / (1 + (math.e)\*\* (-w\*(0+0) + b))

return output

def orFunc2(w, b):

output = 1 / (1 + (math.e)\*\* ((-w\*(1+0)) + b))

return output

def orFunc3(w, b):

output = 1 / (1 + (math.e)\*\* ((-w\*(0+1)) + b))

return output

def orFunc4(w, b):

output = 1 / (1 + (math.e)\*\* ((-w\*(1+1)) + b))

return output

def OR():

error = math.inf

w = math.inf

b = math.inf

while (error > .00001):

negative = random.randint(-1,1)

w = random.random() \* (100) \* negative

b = random.random() \* 100 \* negative

first = orFunc1(w, b) - 0

second = orFunc2(w, b) - 1

third = orFunc2(w, b) - 1

fourth = orFunc2(w, b) - 1

error = (first\*first) + (second\*second) + (third\*third) + (fourth\*fourth)

print ("Current W", w)

print ("Current B", b)

print ("error", error)

#NOT()

AND()

#OR()

endTime = (time.clock() - startTime)

print (endTime)