XOR/XNOR Perceptron Assignment Part 1

Justin Cai

Period 7

class percy:

def \_\_init\_\_(self,w,t):

self.weight = w

self.thresh = t

def set\_input(self, i):

self.input = i

def \_\_int\_\_(self):

count = 0

for x in range(len(self.weight)):

count += int(self.input[x]) \* self.weight[x]

if count > self.thresh:

return 1

return 0

n1 = percy([-1, 1], .5)

n2 = percy([1, -1], .5)

n3 = percy([1, 1], 0)

n3.set\_input([n1, n2])

xor = n3

for a in range(2):

for b in range(2):

n1.set\_input([a,b])

n2.set\_input([a,b])

print(a, b, int(xor))

print("\n")

n1 = percy([1, 1], 1.5)

n2 = percy([-1, -1], -.5)

n3 = percy([1, 1], 0)

n3.set\_input([n1, n2])

xnor = n3

for a in range(2):

for b in range(2):

n1.set\_input([a,b])

n2.set\_input([a,b])

print(a, b, int(xnor))

OUTPUT:

XOR:

(0, 0, 0)

(0, 1, 1)

(1, 0, 1)

(1, 1, 0)

XNOR:

(0, 0, 1)

(0, 1, 0)

(1, 0, 0)

(1, 1, 1)

[Finished in 0.0s]