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ANN1

ANN_AND_OR_NAND_NOR

In this assignment I implemented ANN perceptron algorithm on AND, OR, NAND, NOR gate using 2 input and 1 output sequence.

For each gate, input sequence is same, and according to gate, output sequence is generated. In this using weight initialisation, perceptron algorithm is used for binary classification. So that for false classification, decision boundary is shifted accordingly. There are 4 cases in this, True Positive, False Positive, True Negative, False Negative. For the verification, we can see that if decision boundary is correctly doing classification or not.

```python
#two inputs
X1 = np.array([0, 0, 1, 1])
X2 = np.array([0, 1, 0, 1])

#Output
out1 = np.array([0,0,0,1]) #AND Gate Output
out2 = np.array([0,1,1,1]) #OR Gate Output
out3 = np.array([1,1,1,0]) #NAND Gate Output
out4 = np.array([1,0,0,0]) #NOR Gate Output
```

NAND gate perceptron

NOR gate perceptron