

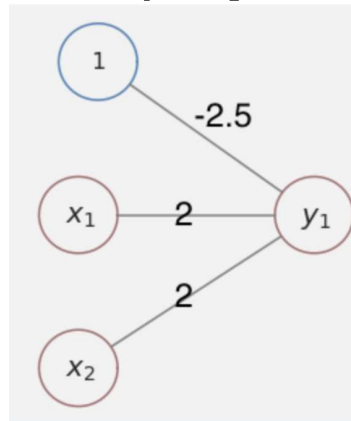
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1. Which of the following logical operations does the following perceptron represent?
Note that x_1 and x_2 are binary.

3 / 3 points



- ☐ x_1 NAND x_2
☒ x_1 AND x_2
☐ x_1 XOR x_2
☐ x_1 OR x_2

✓ Correct
Your answer is correct. The correct answer is x_1 AND x_2 .
Consider Logical AND. Logical AND outputs 1 only when both inputs x_1 and x_2 are 1. For every other case, AND should output 0. The weights are the same for both inputs x_1 and x_2 . $w * x + b$ is negative except for when both x_1 and x_2 are 1.

2. True or False: The following training set can be classified exactly by a single perceptron.

3 / 3 points

x_1	0	1	0	1
x_2	0	0	1	1
y	0	0	1	1

- ☒ True
☐ False

- ✓ Correct
Your answer is correct. A single perceptron is a linear classifier. A linear classifier can properly separate these data points.

3. Which of the following can be guaranteed to behave as Activation functions and are not difficult to train? Select one or more: 6 / 6 points

☐ sine

☒ ReLu

- ✓ Correct
ReLu is guaranteed to behave as an Activation function and is not difficult to train.

☒ Sigmoid

- ✓ Correct
Sigmoid is guaranteed to behave as an Activation function and is not difficult to train.

☒ Tanh

- ✓ Correct
Tanh is guaranteed to behave as an Activation function and is not difficult to train.

☒ Step function

- ✓ Correct
Step function is guaranteed to behave as an Activation function and is not difficult to train.

☐ cosine

4. Consider your model is being trained using the Perceptron algorithm. Let W be the current Weight and x be a misclassified instance. Which of the following statements are valid? 4 / 4 points

☐ If x is a positive instance classified as negative, then $W = W - x$

☒ If x is a positive instance classified as negative, then $W = W + x$

- ✓ Correct

Your answer is correct. If x is a positive instance misclassified as negative, then adjust the weight with $W = W + x$.

☒ If x is a negative instance classified as positive, then $W = W - x$

☒ Correct
Your answer is correct. If x is a negative instance misclassified as positive, then adjust the weight with $W = W - x$.

☐ If x is a negative instance classified as positive, then $W = W + x$

5. What are the possible hyperparameters that can be tuned for a Multi-Layered Perceptron (MLP)? Select one or more:

4 / 4 points

☒ Number of hidden layers

☒ Correct
Number of hidden layers are a hyperparameter that can be tuned for MLP.

☒ Activation functions

☒ Correct
Activation functions are a hyperparameter that can be tuned for MLP.

☐ Weights

☒ Number of nodes in a layer

☒ Correct
Number of nodes in a layer are a hyperparameter that can be tuned for MLP.