

Machine Learning (CS1741) Quiz-II

Total Marks: 5
Time: 10 Mints

Each question carries equal marks (1).

...

Points: 4/5

1

A perceptron with 4 inputs has the weight vector $w = [1 \ 2 \ 3 \ 4]^T$. The activation function is linear and given by $f(y_{in}) = 2y_{in}$. If the input vector is $X = [5 \ 6 \ 7 \ 8]^T$, then find the output of the neuron.

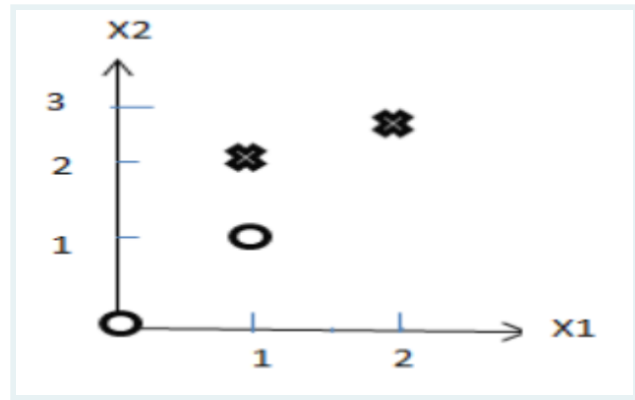
(1/1 Points)

- ☐ 70
- ☐ 128
- ☒ 140 ✓
- ☐ 64

2

Consider the following two-class data set as shown in Figure. Just by visual inspection, find the decision boundary learnt by SVM. [X - Class 1 and O - Class 0].

(1/1 Points)



- ☐ $X_1 = 1.5$
☒ $X_2 = 1.5$ ✓
☐ $X_1 + X_2 = 1.5$
☐ None of these

✕

3

Logistic Regression transforms the output probability to be in a range of $[0, 1]$. Which of the following function is used by logistic regression to convert the probability in the range between $[0, 1]$.
(0/1 Points)

- ☐ Sigmoid ✓
☐ Mode
☒ Square
☐ All of the above

4

Which of the following is true about classification ?
(1/1 Points)

- ☐ It concerns finding decision boundaries that can be used to separate out different classes.
- ☐ Non-linear decision boundaries can solve more complex problems than linear boundaries (straight lines).
- ☐ A test set is more relevant for testing generalization than the training set.
- ☒ All of the above. ✓

5

What do you mean by a hard margin in SVM?
(1/1 Points)

- ☒ The SVM allows very low error in classification. ✓
- ☐ (B)The SVM allows high amount of error in classification.
- ☐ The SVM allows moderate error in classification.
- ☐ None of the above

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