X

Week 2: Assignment 2

The due date for submitting this assignment has passed.

Due on 2022-08-10, 23:59 IST.

Assignment submitted on 2022-08-10, 15:02 IST

1) How many Boolean functions can be designed with 3 inputs? ***1 point***

- 2^3
- 2^2
- 2^{2^3}
- 2^{2^2}

Yes, the answer is correct.
Score: 1

Accepted Answers:
2^{2^3}

2) Pick out the function(s) that are not linearly separable? ***1 point***

- [x] XOR
- [ ] NOT
- [ ] NOR
- [x] !XOR

Yes, the answer is correct.
Score: 1

Accepted Answers:
XOR
!XOR

Week 11 ()

Week 12 ()

Download Videos ()

Books ()

Text Transcripts ()

Live Sessions ()

Problem Solving Session ()

3) Out of the functions that can be designed from n inputs, how many of them are linearly separable? ***1 point***

- 2^{2^n}
- 2^{2n}
- 2^n
- unknown

Yes, the answer is correct.
Score: 1
Accepted Answers:
unknown

4) Which of the following statements are TRUE? ***1 point***

Statement I. The given network of perceptrons can be used to implement any complex boolean input functions.
Statement II. Each Wi can be adjusted to get desired output for that input.

- Only I
- Only II
- Both
- None

Yes, the answer is correct.
Score: 1
Accepted Answers:
Both

5) Consider you are given a Boolean function with 5 inputs. It is represented by a network of perceptrons containing one hidden layer and one output layer with one perceptron. How many perceptrons are there in the hidden layer? ***1 point***

- 2^5
- 5^2
- 2^{2^5}
- 2^{5^2}

Yes, the answer is correct.
Score: 1
Accepted Answers:
2^5

6) Assume you have a perceptron to solve a problem of deciding if a student is eligible for scholarship or not. We have only one input in this case. Bias being 50%. What will be the decision of the model when the student scored 0.49 and 0.51? ***1 point***

- eligible, eligible
- eligible, ineligible
- ineligible, eligible

- ineligible, ineligible

Yes, the answer is correct.
Score: 1

Accepted Answers:
ineligible, eligible

7) State True or False. ***1 point***

I. Logistic function is smooth and continuous. II. Logistic function is differentiable.

- I is True and II is False
- I is False and II is True
- Both are True
- Both are False

Yes, the answer is correct.
Score: 1

Accepted Answers:
Both are True

8) Select all that applies to a learning algorithm. ***1 point***

- [x] Aims to find the value for parameter
- [ ] Maximize the objective function
- [x] Aims to find all possible values for the input x
- [x] Minimize the objective function

No, the answer is incorrect.
Score: 0

Accepted Answers:
Aims to find the value for parameter
Minimize the objective function

9) Sum of squared error is better than sum of errors. Why is this true? ***1 point***

- Differential is one for SSE
- Positive & Negative do not cancel in SSE
- Error is magnified by squaring in SSE
- Sum of errors might lead to negative values

Yes, the answer is correct.
Score: 1

Accepted Answers:
Positive & Negative do not cancel in SSE

10) Consider a machine learning model, with only one input x and output y. Given training instances, (x, y) = (0.4, 0.3), (1.8, 0.6), w = 1.2, b = -1.4 and the function is logistic sigmoid function. Compute the loss function, $L(w, b) = \frac{1}{2} \sum_{i=1}^{N} (y_i - f(x_i))^2$

0.0059

No, the answer is incorrect.
Score: 0

Accepted Answers:
(Type: Range) 0.003,0.004

1 point