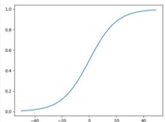
Unit 2 - Week 1

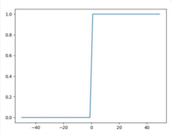
Assignment 1

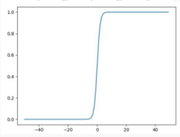
The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-02-12, 23:59 IST.

1) From the below graphs, select the one that satisfies the equation $y = \sigma(0.1^*x)$: *1 point*



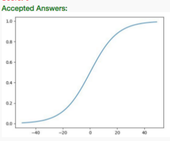




None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:



2) Perform z-score normalization and min-max scaling on the given array and select from the given options. *1 point*

arr = [100 , 50 , 400 , 300 , 100]

z-score: [-0.66 -1.03 1.45 0.81 -0.66] ,
min-max: [0.14 0. 1. 0.71 0.14]

z-score: [-0.26 -1.54 1.46 0.6 -0.26] ,
min-max: [0.43 0. 1 . 0.71 0.43]

z-score: [-0.86 -1.25 1.48 0.7 -0.08] ,
min-max: [0.14 0. 1. 0.71 0.43]

None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:
None of the above

3) We have a neural network with an input layer of h_0 nodes, hidden layers of $h_1, h_2, h_3, \ldots, h_i$ nodes respectively and an output layer of h_{i+1} nodes. How many parameters does the network have? *1 point*

$\sum_{i=1}^{i}[(h_i * h_{i+1}) + h_i]$

$\sum_{i=0}^{i}[(h_i * h_{i+1}) + h_i]$

$\sum_{i=0}^{i}[(h_i * h_{i+1}) + h_{i+1}]$

None of the above

No, the answer is incorrect.
Score: 0

Accepted Answers:

$\sum_{i=0}^{i}[(h_i * h_{i+1}) + h_{i+1}]$

4) Suppose we need to minimize the following loss function by tuning scalar value w using gradient descent: f(w) = 9 + 4w + w^2 . Given w_0 =0, select the best value for learning rate α, such that gradient descent reaches the optimal value in just one step. *1 point*

0.1
0.5
1
Any α: 1 > α > 0

No, the answer is incorrect.
Score: 0

Accepted Answers:
0.5

5) In linear regression with MAE loss, if we only had one target Y_train for all the observations X_train, then the optimal value that the prediction Y_pred should have is: *1 point*

Mean of Y_train
Median of Y_train
Mode of Y_train
Variance of Y_train

No, the answer is incorrect.
Score: 0

Accepted Answers:
Median of Y_train

6) A machine learning model gets an accuracy of 90% on a dataset with 90% positive class and 10% negative class. Can we conclude that the model is a good classifier of the data? *1 point*

Yes
No

No, the answer is incorrect.
Score: 0

Accepted Answers:
No

7) Suppose you are given with the following training data for linear regression $(h(x) = wx + b)$: *1 point*

$x = [3, 2, 4, 0]$
$y = [4, 1, 3, 1]$

You are using loss function $J(w, b) = \frac{1}{2}\sum_{i=1}^{4}[h(x_i) - y_i]^2$

What is the value of $J(1, 1)$?

1
2
4
8

No, the answer is incorrect.
Score: 0

Accepted Answers:
4

8) In the above question, if (w, b) = (1, 3), what is *h(4)* ? *1 point*

3
5
7
8

No, the answer is incorrect.
Score: 0

Accepted Answers:
7

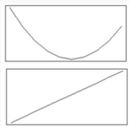
9) If we halve the value of a given feature, what happens to the coefficients of other features estimated by minimizing squared loss function? (assuming no interaction between any two features) *1 point*

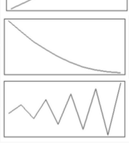
Double
Halve
Stay the same
More information required to say anything

No, the answer is incorrect.
Score: 0

Accepted Answers:
Stay the same

10) Which of the following model complexity vs. loss function plots is most likely from training data? *1 point*





No, the answer is incorrect.
Score: 0

Accepted Answers: