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NPTEL (https://swayam.gov.in/explorer?ncCode=NPTEL) » **Deep Learning - IIT Ropar (course)**

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Course outline

How does an NPTEL online course work?

Week 0

Week 1

Week 2

Week 3

◉ Feedforward Neural Networks (a.k.a multilayered network of neurons) (unit? unit=45&lesson=46)

○ Learning Paramters of Feedforward Neural Networks (Intuition) (unit? unit=45&lesson=47)

○ Output functions and

Assignment 3

The due date for submitting this assignment has passed.

Due on 2021-02-10, 23:59 IST.

Assignment submitted on 2021-02-10, 23:11 IST

1) Cross-entropy gives the measure of how close the predicted distribution is, to a true distribution.   **1 point**

◉ True

○ False

Yes, the answer is correct.
Score: 1

Accepted Answers:
True

2) Consider a classification example such that the cross-entropy is given as   **1 point**
$-\sum_{c=1}^{k} y_c \log \hat{y}_c$. Then, will y_c and $\hat{y}_c$ represent predicted probability and true probability, respectively?

○ True

◉ False

Yes, the answer is correct.
Score: 1

Accepted Answers:
False

3) Cross-entropy and mean squared error are the two main types of loss functions to be   **1 point**
used when training neural network models.

◉ True

○ False

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

4) S_1 and S_2 are two statements with respect to SoftMax function, Choose the correct   **1 point**
option:

S_1: It is a function that turns a vector of K real values into a vector of K real values resulting a sum
equal to 1.
S_2: It can be used in a classifier only when the output classes are mutually exclusive.

○ S_1 is true and S_2 is false

○ S_1 is false and S_2 is true

◉ Both S_1 and S_2 are true

○ Both S_1 and S_2 are false

Yes, the answer is correct.
Score: 1
Accepted Answers:
Both S_1 and S_2 are true

5) If the output of a feed forward neural network is real, then which activation function is to **1 point**
be used?

○ Linear.

◉ Non-linear.

○ Rectilinear.

○ None of these.

No, the answer is incorrect.
Score: 0
Accepted Answers:
Linear.

6) Identify the correct sequence of steps involved in computation of output gradient with   **1 point**
respect to back propagation technique.

i) Compute gradients with respect to parameters.
ii) Compute gradients with respect to pre-activation.
iii) Computer gradients with respect to the layer below.

○ i, ii, iii

◉ i, iii, ii

○ ii, iii, i

○ ii, i, iii

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

i, iii, ii

7) Which of the following is not true with reference to sigmoid activation function?   ***1 point***

○ It is one of the most widely used linear activation functions.

○ Sigmoid transforms the values between the range 0 and 1.

◉ The output of all the neurons will be of the same sign.

○ The f(x) = 1/(1+e^-x)

No, the answer is incorrect.
Score: 0

Accepted Answers:
It is one of the most widely used linear activation functions.

8) Identify the incorrect statement/s corresponding to Information content.   ***1 point***

☑ Low Probability Event means Low Information.

☑ High Probability Event means High Information.

☐
Information content can be calculated as information $(x) = -log(p(x))$, where $p(x)$ is the
probability of the event x.

☐ Information content will be zero when the probability of an event is 1

Yes, the answer is correct.
Score: 1

Accepted Answers:
Low Probability Event means Low Information.
High Probability Event means High Information.

9) There are 4 red balls, 2 yellow balls and 3 green balls in a bag. What is the amount of   ***1 point***
information expected each time a ball is chosen from the bag?

◉ 1.5304755

○ 1.6308843

○ 1.4345667

○ None of these

Yes, the answer is correct.
Score: 1

Accepted Answers:
1.5304755

10) The cross-entropy of two distributions, p_i (true distribution) and q_i (predicted   ***1 point***
distribution) is minimum when $p_i = q_i$.

◉ True

○ False

Yes, the answer is correct.
Score: 1

Accepted Answers:
True