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bhandarishivay2001@gmail.com ✓

NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Deep Learning - IIT Ropar (course)**Course
outline****How does an
NPTEL online
course work?
()****Week 0 ()****Week 1 ()****Week 2 ()****Week 3 ()****week 4 ()****Week 5 ()****Week 6 ()****Week 7 ()****Week 8 ()****Week 9 ()****week 10 ()**

Week 8: Assignment 8

The due date for submitting this assignment has passed.**Due on 2022-09-21, 23:59 IST.****As per our records you have not submitted this assignment.**

- 1) Identify the statements that are True for training the following deep neural network. **1 point**

Week 11 ()

Week 12 ()

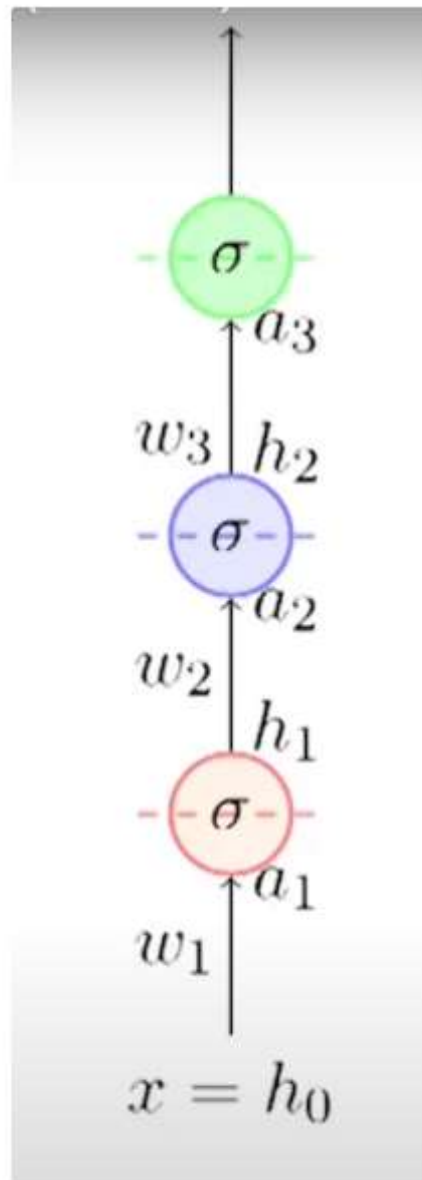
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- ☐ Implement Gradient Descent Algorithm
- ☐ Apply chain rule to compute gradients
- ☐ Gradient from any layer depends only on the input x_i
- ☐ Chain rule applied across multiple paths

No, the answer is incorrect.

Score: 0

Accepted Answers:

Implement Gradient Descent Algorithm

Apply chain rule to compute gradients

2) Which of the following are True for Unsupervised pre-training?

1 point

- ☐ Pre-training is more robust than random initialization

- ☐ Layers capture the internal characteristics of the data
- ☐ Ensures Learning is not greedy
- ☐ constrains most of the weights to zero

No, the answer is incorrect.

Score: 0

Accepted Answers:

Pre-training is more robust than random initialization

Layers capture the internal characteristics of the data

Ensures Learning is not greedy

3) What would be the gradient when sigmoid neuron saturates?

1 point

- ☐ maximum
- ☐ keeps decreasing
- ☐ vanishes
- ☐ keeps increasing

No, the answer is incorrect.

Score: 0

Accepted Answers:

vanishes

4) Identify the problem with Sigmoid neurons.

1 point

- ☐ zero-centered
- ☐ computationally expensive
- ☐ update directions of gradient is not restricted
- ☐ neurons do not saturate

No, the answer is incorrect.

Score: 0

Accepted Answers:

computationally expensive

5) Pick out the Activation function that converges much faster.

1 point

- ☐ Linear
- ☐ tanh
- ☐ sigmoid
- ☐ ReLU

No, the answer is incorrect.

Score: 0

Accepted Answers:

ReLU

6) One of the disadvantages of ReLU is that it can lead to dead neurons. Select all the conditions that causes more neurons to die.

1 point

- ☐ bias receives a large negative update
- ☐ learning rate is high

- ☐ too many inputs
- ☐ initial weights are not good

No, the answer is incorrect.

Score: 0

Accepted Answers:

bias receives a large negative update

learning rate is high

7) Which of the following variants of ReLU is computationally expensive?

1 point

- ☐ Leaky ReLU
- ☐ Parametric ReLU
- ☐ Exponential Linear Unit
- ☐ None

No, the answer is incorrect.

Score: 0

Accepted Answers:

Exponential Linear Unit

8) Identify the cause of Symmetry Breaking problem.

1 point

- ☐ weights in a network initialised to random values.
- ☐ weights in a network initialised to same value.
- ☐ weights in a network initialised by pre-training.
- ☐ weights in a network initialised to unequal values.

No, the answer is incorrect.

Score: 0

Accepted Answers:

weights in a network initialised to same value.

9) Pick out the disadvantage of Maxout neuron.

1 point

- ☐ No saturation
- ☐ Gradients vanish
- ☐ Doubles the number of parameters
- ☐ Not zero-centered

No, the answer is incorrect.

Score: 0

Accepted Answers:

Doubles the number of parameters

10) Consider a Deep neural network with three inputs and five hidden layers h_0 to h_4 with **1 point** three neurons each. The Learning process would be hard if across the mini-batches, the distribution of h_3 keeps changing. Identify a possible solution.

- ☐ Pre-activation at layer h_0 were unit gaussian
- ☐ Pre-activation at every layer were unit gaussian

☐ Pre-activation at any layer is not a unit gaussian



Pre-activation at layer h_4 were unit gaussian

No, the answer is incorrect.

Score: 0

Accepted Answers:

Pre-activation at every layer were unit gaussian