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

## Course outline

About NPTEL ()

How does an NPTEL online course work? ()

Week 1 ()

Week 2 ()

Week 3 ()

week 4 ()

Week 5 ()

Week 6 ()

Week 7 ()

Week 8 ()

- ☐ A quick recap of training deep neural networks (unit?)

## Week 8 : Assignment 8

The due date for submitting this assignment has passed.

**Due on 2024-09-18, 23:59 IST.**

As per our records you have not submitted this assignment.

1) Which of the following activation functions is not zero-centered?

**1 point**

- ☐ Sigmoid
- ☐ Tanh
- ☐ ReLU
- ☐ Softmax

No, the answer is incorrect.

Score: 0

Accepted Answers:

*Sigmoid**ReLU**Softmax*

2) Which of the following activation functions is preferred to avoid the vanishing gradient problem?

**1 point**

- ☐ Sigmoid
- ☐ Tanh
- ☐ ReLU
- ☐ None of these

No, the answer is incorrect.

Score: 0

Accepted Answers:

*ReLU*3) Given a neuron initialized with weights  $w_1 = 1.5$ ,  $w_2 = 0.5$ , and inputs  $x_1 = 0.2$ ,  $x_2 = -0.5$ , calculate the output of a ReLU neuron.

unit=107&less  
on=108)

☐ Unsupervised  
pre-training  
(unit?  
unit=107&less  
on=109)

☐ Better  
activation  
functions  
(unit?  
unit=107&less  
on=110)

☐ Better  
initialization  
strategies  
(unit?  
unit=107&less  
on=111)

☐ Batch  
Normalization  
(unit?  
unit=107&less  
on=112)

☐ Lecture  
Material for  
Week 8 (unit?  
unit=107&less  
on=113)

☐ Week 8  
Feedback  
Form: Deep  
Learning - IIT  
Ropar (unit?  
unit=107&less  
on=191)

☐ **Quiz: Week 8  
: Assignment  
8  
(assessment?  
name=296)**

**Week 9 ()**

**week 10 ()**

**Week 11 ()**

**Week 12 ()**

No, the answer is incorrect.

Score: 0

Accepted Answers:

(Type: Numeric) 0.05

**1 point**

4) What makes batch normalization effective in deep networks?

**1 point**

- ☐ It reduces the covariance shift
- ☐ It accelerates training
- ☐ It introduces regularization
- ☐ It reduces the internal shift in activations

No, the answer is incorrect.

Score: 0

Accepted Answers:

*It reduces the covariance shift*

*It accelerates training*

*It reduces the internal shift in activations*

5) Which of the following methods can help to avoid saturation in deep learning?

**1 point**

- ☐ Using a different activation function.
- ☐ Increasing the learning rate.
- ☐ Increasing the model complexity
- ☐ All of the above.

No, the answer is incorrect.

Score: 0

Accepted Answers:

*Using a different activation function.*

6) Which of the following is true about the role of unsupervised pre-training in deep learning?

**1 point**

- ☐ It is used to replace the need for labeled data
- ☐ It is used to initialize the weights of a deep neural network
- ☐ It is used to fine-tune a pre-trained model
- ☐ It is only useful for small datasets

No, the answer is incorrect.

Score: 0

Accepted Answers:

*It is used to initialize the weights of a deep neural network*

7) Which of the following is an advantage of unsupervised pre-training in deep learning?

**1 point**

- ☐ It helps in reducing overfitting
- ☐ Pre-trained models converge faster
- ☐ It improves the accuracy of the model



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☐ It requires fewer computational resources

No, the answer is incorrect.

Score: 0

Accepted Answers:

*It helps in reducing overfitting*

*Pre-trained models converge faster*

*It improves the accuracy of the model*

8) What is the main cause of the Dead ReLU problem in deep learning?

**1 point**

- ☐ High variance
- ☐ High negative bias
- ☐ Overfitting
- ☐ Underfitting

No, the answer is incorrect.

Score: 0

Accepted Answers:

*High negative bias*

9) How can you tell if your network is suffering from the Dead ReLU problem?

**1 point**

- ☐ The loss function is not decreasing during training
- ☐ The accuracy of the network is not improving
- ☐ A large number of neurons have zero output
- ☐ The network is overfitting to the training data

No, the answer is incorrect.

Score: 0

Accepted Answers:

*A large number of neurons have zero output*

10) What is the purpose of Batch Normalization in Deep Learning?

**1 point**

- ☐ To improve the generalization of the model
- ☐ To reduce overfitting
- ☐ To reduce bias in the model
- ☐ To ensure that the distribution of the inputs at different layers doesn't change

No, the answer is incorrect.

Score: 0

Accepted Answers:

*To ensure that the distribution of the inputs at different layers doesn't change*

