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 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

- Linearly Separable Boolean Functions (unit? unit=35&lesson=36)
- Representation Power of a Network of Perceptrons (unit? unit=35&lesson=37)
- Sigmoid Neuron (unit? unit=35&lesson=38)
- A typical Supervised

Assignment 2

The due date for submitting this assignment has passed.

Due on 2021-02-07, 23:59 IST.

Assignment submitted on 2021-02-07, 12:06 IST

 1) Which of the following two input Boolean logic function/s is/are linearly inseparable? **1 point**

- ☐ AND
☐ NAND
☒ XOR
☒ NOT XOR

Yes, the answer is correct.

Score: 1

Accepted Answers:

XOR

NOT XOR

 2) A MLP with a single hidden layer can represent Boolean functions irrespective of whether they are linearly separable or inseparable. **1 point**

- ☐ True
☒ False

No, the answer is incorrect.

Score: 0

Accepted Answers:

True

 3) The layer which contains perceptron's in MLP is called as _____ **1 point**

Machine Learning Setup (unit? unit=35&lesson=39)

● Learning Parameters: (Infeasible) guess work (unit? unit=35&lesson=40)

● Learning Parameters: Gradient Descent (unit? unit=35&lesson=41)

● Representation Power of Multilayer Network of Sigmoid Neurons (unit? unit=35&lesson=42)

● Lecture Material for Week 2 (unit? unit=35&lesson=43)

● Quiz: Assignment 2 (assessment? name=180)

○ Week 2 Feedback Form : Deep Learning - IIT Ropar (unit? unit=35&lesson=44)

Week 3

week 4

Week 5

Week 6

Week 7

Week 8

Week 9

- ☐ Output layer
☐ Middle layer
☒ Hidden layer
☐ Input layer

Yes, the answer is correct.

Score: 1

Accepted Answers:

Hidden layer

4) The values produced by the sigmoid function lies between the range _____

1 point

- ☒ 0 to 1
☐ 1 to 3
☐ 0 to 2
☐ 0 to 4

Yes, the answer is correct.

Score: 1

Accepted Answers:

0 to 1

5) Gradient Descent rule says that the direction 'u' that we intend to move in should be at **1 point** 60° with respect to the gradient.

- ☐ True
☒ False

Yes, the answer is correct.

Score: 1

Accepted Answers:

False

6) The algorithm/s which help us to learn the parameters of the sigmoid neurons starting from random values is/are _____ **1 point**

- ☐ Perceptron learning algorithm.
☒ Gradient descent learning algorithm.
☐ Both Perceptron learning algorithm and Gradient descent learning algorithm can be used.
☐ None of these.

No, the answer is incorrect.

Score: 0

Accepted Answers:

Both Perceptron learning algorithm and Gradient descent learning algorithm can be used.

7) Identify the property/ies which is/are applicable to sigmoid neuron.

1 point

- ☒ Smooth.
☒ Continuous.
☒ Differentiable.
☐ None of these.

[week 10](#)[Week 11](#)[Week 12](#)[Download
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Yes, the answer is correct.

Score: 1

Accepted Answers:

Smooth.

Continuous.

Differentiable.

8) S_1 and S_2 are two statements related to Gradient Descent, choose the correct option. **1 point**

S_1 : Gradient Descent is an optimization algorithm for finding a local minimum of a differentiable function.

S_2 : The logic is to take repeated steps in the direction of the gradient of the function at the current point.

- ☐ 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.

No, the answer is incorrect.

Score: 0

Accepted Answers:

S_1 is true and S_2 is false.

9) As number of inputs increases, the number of perceptron's in the hidden layer also increases exponentially. **1 point**

- ☒ True
- ☐ False

Yes, the answer is correct.

Score: 1

Accepted Answers:

True

10) An MLP consists of at least _____ layers of nodes. **1 point**

- ☐ Two
- ☒ Three
- ☐ Four
- ☐ None of these

Yes, the answer is correct.

Score: 1

Accepted Answers:

Three