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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

Week 3

week 4

Week 5

Week 6

Week 7

Week 8

Week 9

week 10

Week 11

# Assignment 11

The due date for submitting this assignment has passed.

Due on 2021-04-07, 23:59 IST.

Assignment submitted on 2021-04-07, 15:09 IST

 1) In feedforward and convolutional neural network, the size of the input is always fixed. **1 point**
☒ True

☐ False

Yes, the answer is correct.

Score: 1

Accepted Answers:

True

 2) By the chain rule of derivatives,  $\frac{\partial L(\theta)}{\partial W}$  is obtained by \_\_\_\_\_ gradients along all **1 point**  
 the paths from  $\partial L(\theta)$  to  $W$ .

☒ Summing

☐ Multiplying

☐ Differentiating

☐ Differentiating

Yes, the answer is correct.

Score: 1

Accepted Answers:

Summing

Sequence Learning Problems (unit? unit=149&lesson=150)

Recurrent Neural Networks (unit? unit=149&lesson=151)

Backpropagation through time (unit? unit=149&lesson=152)

The problem of Exploding and Vanishing Gradients (unit? unit=149&lesson=153)

Some Gory Details (unit? unit=149&lesson=154)

Selective Read, Selective Write, Selective Forget - The Whiteboard Analogy (unit? unit=149&lesson=155)

Long Short Term Memory(LSTM) and Gated Recurrent Units(GRUs) (unit? unit=149&lesson=156)

How LSTMs avoid the problem of vanishing gradients (unit? unit=149&lesson=157)

How LSTMs avoid the problem of vanishing gradients (Contd.) (unit? unit=149&lesson=158)

3) Related to Whiteboard analogy and deriving an expression on the whiteboard which of **1 point** the following strategy (at each time step) is/are false?

- ☐ Selectively write on the board
- ☒ Selectively read the already read content
- ☐ Selectively forget(erase) some contents
- ☐ All of these

Yes, the answer is correct.

Score: 1

Accepted Answers:

*Selectively read the already read content*

4) During both backward and forward propagation, the information vanishes. **1 point**

- ☐ True
- ☒ False

Yes, the answer is correct.

Score: 1

Accepted Answers:

*False*

5) Related to Selective Write in RNNs, choose the correct option. **1 point**

S<sub>1</sub>: A vector  $O_{(t-1)}$  which decides what fraction of each element of  $s_{(t-1)}$  should be passed to the next state.

S<sub>2</sub>: Each element of  $O_{(t-1)}$  gets multiplied with the corresponding element of  $s_{(t-1)}$ .

S<sub>3</sub>: Each element of  $O_{(t-1)}$  is restricted between 1 and 2.

- ☒ S<sub>1</sub> is true, S<sub>2</sub> is true, S<sub>3</sub> is false.
- ☐ S<sub>1</sub> is false, S<sub>2</sub> is true, S<sub>2</sub> is true.
- ☐ S<sub>1</sub> is true, S<sub>2</sub> is true, S<sub>3</sub> is true.
- ☐ S<sub>1</sub> is false, S<sub>2</sub> is false, S<sub>3</sub> is true.

Yes, the answer is correct.

Score: 1

Accepted Answers:

*S<sub>1</sub> is true, S<sub>2</sub> is true, S<sub>3</sub> is false.*

6) Word2vec is an example for convolutional neural network. **1 point**

- ☒ True
- ☐ False

No, the answer is incorrect.

Score: 0

Accepted Answers:

*False*

7) The Gradient of  $L_t(\theta)$  w.r.t  $\theta_i$  explodes when the gradient flowing through at least **1 point** \_\_\_\_\_ path explodes.

☒ Lecture  
Material for  
Week 11 (unit?  
unit=149&lesson=159)

☒ Quiz:  
**Assignment 11  
(assessment?  
name=189)**

☐ Week 11  
Feedback Form  
: Deep  
Learning - IIT  
Ropar (unit?  
unit=149&lesson=160)

**Week 12**

**Download  
Videos**

**Text Transcripts**

- ☒ One  
☐ Two  
☐ Three  
☐ Four

Yes, the answer is correct.

Score: 1

Accepted Answers:

*One*

8) Total loss is the sum of the loss over all time steps. **1 point**

- ☒ True  
☐ False

Yes, the answer is correct.

Score: 1

Accepted Answers:

*True*

9) LSTM (Long Short-Term Memory) has \_\_\_\_\_ variants which include different number of gates and also different arrangement of gates. **1 point**

- ☐ One  
☐ Two  
☐ Three  
☒ Many

Yes, the answer is correct.

Score: 1

Accepted Answers:

*Many*

10) In an ordered network each state variable is computed one at a time in a specified order. **1 point**

- ☒ True  
☐ False

Yes, the answer is correct.

Score: 1

Accepted Answers:

*True*