X

Week 11: Assignment 11

The due date for submitting this assignment has passed.

Due on 2022-10-12, 23:59 IST.

Assignment submitted on 2022-10-12, 00:34 IST

1) Identify the model that accepts input of different dimensions and the inputs that are dependent on each other in the process of Learning. ***1 point***

- FeedForward Neural Network
- Convolutional Neural Network
- Recurrent Neural Network
- None

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

2) Select all the characteristics that should be possessed by a Recurrent Neural Network. ***1 point***

- Should account for the dependence of inputs
- Should account for variable number of inputs
- Should ensure that each timestep implements a suitable function
- Should account for same size of inputs

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

Week 11 ()

Week 12 ()

Download Videos ()

Books ()

Text Transcripts ()

Live Sessions ()

Problem Solving Session ()

Should account for the dependence of inputs
Should account for variable number of inputs

3) Pick out the application that does not belong to the sequence learning approach. ***1 point***

- Translate a single input language to several languages
- Speech recognition
- Image captioning
- Object detection
- Create classical Music
- Stock market projections

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

4) Which of the statements is TRUE for Backpropagation Through Time(BPTT)? ***1 point***

I. Unlike backprop, in BPTT we sum up gradients for corresponding weight for each time step
II. Unlike backprop, in BPTT we find sum or product of gradients for corresponding weight at each time step

- I only is True
- II only is True
- Both I and II are True
- Both I and II are False

No, the answer is incorrect.
Score: 0
Accepted Answers:
I only is True

5) Choose the appropriate solution for the “Exploding Gradient” problem in RNNs? ***1 point***

- Dropout
- Gradient Clipping
- Batch normalization
- RELU

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

6) Which of the following is true about Gated Recurrent units? ***1 point***

I. Explicit Forget gate
II. Gate directly depends on s_{t-1}
III. Gate depends on the intermediate h_{t-1}

- I only
- II only

- III only
- All the above

Yes, the answer is correct.
Score: 1

Accepted Answers:
II only

7) LSTM equations involve the computation of gates and states for selective read, selective write and selective forget. What is the total number of computations at every timestep in LSTM? ***1 point***

- 3
- 4
- 5
- 6

Yes, the answer is correct.
Score: 1

Accepted Answers:
6

8) Which of the following statements is(are)True for LSTM? ***1 point***
I. The flow of information and gradients is controlled by Gates
II. The gradients vanish only when they actually should vanish.

- Both are True
- I is False hence II is False
- I is True but II is False
- I is False but II is True

Yes, the answer is correct.
Score: 1

Accepted Answers:
Both are True

9) Identify the correct equation for the output gate of LSTM network. Given U and W are weight matrices, b is the bias, t denotes timestep, x denotes input and h denotes output from previous cell. ***1 point***

- $O_t = \sigma(W_0 h_t + U_0 x_t + b_0)$
- $O_t = \sigma(W_0 h_{t-1} + U_0 x_t + b_0)$
- $O_t = \sigma(W_0 h_{t-1} + U_0 x_{t-1} + b_0)$
- $O_t = \sigma(W_0 h_t + U_0 s_t + b_0)$

Yes, the answer is correct.
Score: 1

Accepted Answers:
$O_t = \sigma(W_0 h_{t-1} + U_0 x_t + b_0)$

10) Which operation does the given set of equations represent? ***1 point***

$$O_{t-1} = \sigma(W_0 h_{t-2} + U_0 x_{t-1} + b_0)$$
$$h_{t-1} = O_{t-1} \odot \sigma(s_{t-1})$$

- Selective read
- Selective write
- Selective forget
- GRU's Gates

Yes, the answer is correct.
Score: 1

Accepted Answers:
Selective write