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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Deep Learning - IIT Ropar (course)Course
outlineAbout
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Week 11 : Assignment 11

The due date for submitting this assignment has passed.

Due on 2024-10-09, 23:59 IST.

As per our records you have not submitted this assignment.

1) What is the basic concept of Recurrent Neural Network?

1 point

- ☐ Use a loop between inputs and outputs in order to achieve the better prediction
- ☐ Use recurrent features from dataset to find the best answers
- ☐ Use loops between the most important features to predict next output
- ☐ Use previous inputs to find the next output according to the training set

No, the answer is incorrect.

Score: 0

Accepted Answers:

Use previous inputs to find the next output according to the training set

2) Select the correct statements about GRUs

1 point

- ☐ GRUs have fewer parameters compared to LSTMs
- ☐ GRUs use a single gate to control both input and forget mechanisms
- ☐ GRUs are less effective than LSTMs in handling long-term dependencies
- ☐ GRUs are a type of feedforward neural network

No, the answer is incorrect.

Score: 0

Accepted Answers:

*GRUs have fewer parameters compared to LSTMs**GRUs use a single gate to control both input and forget mechanisms*

3) What is the main advantage of using GRUs over traditional RNNs?

1 point

- ☐ They are simpler to implement
- ☐ They solve the vanishing gradient problem

Week 11 ()

☐ Sequence Learning Problems (unit? unit=150&lesson=151)

☐ Recurrent Neural Networks (unit? unit=150&lesson=152)

☐ Backpropagation through time (unit? unit=150&lesson=153)

☐ The problem of Exploding and Vanishing Gradients (unit? unit=150&lesson=154)

☐ Some Gory Details (unit? unit=150&lesson=155)

☐ Selective Read, Selective Write, Selective Forget - The Whiteboard Analogy (unit? unit=150&lesson=156)

☐ Long Short Term Memory(LSTM) and Gated Recurrent Units(GRUs) (unit? unit=150&lesson=157)

☐ How LSTMs avoid the problem of

- ☐ They require less computational power
- ☐ They can handle non-sequential data

No, the answer is incorrect.

Score: 0

Accepted Answers:

They solve the vanishing gradient problem

4) The statement that LSTM and GRU solves both the problem of vanishing and exploding gradients in RNN is

1 point

- ☐ True
- ☐ False

No, the answer is incorrect.

Score: 0

Accepted Answers:

False

5) Arrange the following sequence in the order they are performed by LSTM at time step t.

1 point

[Selectively read, Selectively write, Selectively forget]

- ☐ Selectively read, Selectively write, Selectively forget
- ☐ Selectively write, Selectively read, Selectively forget
- ☐ Selectively read, Selectively forget, Selectively write
- ☐ Selectively forget, Selectively write, Selectively read

No, the answer is incorrect.

Score: 0

Accepted Answers:

Selectively read, Selectively forget, Selectively write

6) Which of the following is a limitation of traditional feedforward neural networks in handling sequential data?

1 point

- ☐ They can only process fixed-length input sequences
- ☐ They are highly optimizable using the gradient descent methods
- ☐ They can't model temporal dependencies between sequential data
- ☐ All of These

No, the answer is incorrect.

Score: 0

Accepted Answers:

They can only process fixed-length input sequences

They can't model temporal dependencies between sequential data

7) Which of the following techniques can be used to address the exploding gradient problem in RNNs?

1 point

- ☐ Gradient clipping
- ☐ Dropout
- ☐ L1 regularization
- ☐ L2 regularization

vanishing
gradients
(unit?
unit=150&less
on=158)

☐ How LSTMs
avoid the
problem of
vanishing
gradients
(Contd.) (unit?
unit=150&less
on=159)

☐ Lecture
Material for
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☐ Week 11
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unit=150&less
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☐ Quiz: Week
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Assignment
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(assessment?
name=299)

Week 12 ()

**Download
Videos ()**

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**Problem
Solving
Session -
July 2024 ()**

No, the answer is incorrect.

Score: 0

Accepted Answers:

Gradient clipping

8) Which of the following is a formula for computing the output of an LSTM cell?

1 point

☐

$$o_t = \sigma(W_o[h_{t-1}, x_t] + b_o)$$

☐

$$f_t = \sigma(W_f[h_{t-1}, x_t] + b_f)$$

☐

$$c_t = f_t * c_{t-1} + i_t * g_t$$

☐

$$h_t = o_t * \tanh(c_t)$$

No, the answer is incorrect.

Score: 0

Accepted Answers:

*$h_t = o_t * \tanh(c_t)$*

9) Which type of neural network is best suited for processing sequential data?

1 point

☐

Convolutional Neural Networks (CNN)

☐

Recurrent Neural Networks (RNN)

☐

Fully Connected Neural Networks (FCN)

☐

Deep Belief Networks (DBN)

No, the answer is incorrect.

Score: 0

Accepted Answers:

Recurrent Neural Networks (RNN)

10) Which of the following is true about LSTM and GRU networks?

1 point

☐

LSTM networks have more gates than GRU networks

☐

GRU networks have more gates than LSTM networks

☐

LSTM and GRU networks have the same number of gates

☐

Both LSTM and GRU networks have no gates

No, the answer is incorrect.

Score: 0

Accepted Answers:

LSTM networks have more gates than GRU networks

