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Week 12 : Assignment 12

The due date for submitting this assignment has passed.

Due on 2024-10-16, 23:59 IST.

Assignment submitted on 2024-10-16, 16:22 IST

1) What is the primary purpose of the attention mechanism in neural networks? ***1 point***

- ○ To reduce the size of the input data
- ◉ To focus on specific parts of the input sequence
- ○ To increase the complexity of the model
- ○ To eliminate the need for recurrent connections

Yes, the answer is correct.
Score: 1

Accepted Answers:
To focus on specific parts of the input sequence

2) Which of the following are benefits of using attention mechanisms in neural networks? ***1 point***

- ☑ Improved handling of long-range dependencies
- ☑ Enhanced interpretability of model predictions
- ☐ Reduction in model complexity
- ☑ Ability to handle variable-length input sequences

Yes, the answer is correct.
Score: 1

Accepted Answers:
Improved handling of long-range dependencies
Enhanced interpretability of model predictions
Ability to handle variable-length input sequences

3) If we make the vocabulary for an encoder-decoder model using the given sentence. What will be the size of our vocabulary? ***1 point***

Sentence: Convolutional neural networks excel at recognizing patterns and features within images, enhancing object detection accuracy significantly.

- 13
- 18
- 14
- 16 (selected)

No, the answer is incorrect.
Score: 0

Accepted Answers:
18

4) In a hierarchical attention network, what are the two primary levels of attention? ***1 point***

- Character-level and word-level
- Word-level and sentence-level (selected)
- Sentence-level and document-level
- Paragraph-level and document-level

Yes, the answer is correct.
Score: 1

Accepted Answers:
Word-level and sentence-level

5) Which of the following are the advantages of using attention mechanisms in encoder-decoder models? ***1 point***

- [ ] Reduced computational complexity
- [x] Ability to handle variable-length input sequences
- [x] Improved gradient flow during training
- [x] Automatic feature selection
- [ ] Reduced memory requirements

Yes, the answer is correct.
Score: 1

Accepted Answers:
Ability to handle variable-length input sequences
Improved gradient flow during training
Automatic feature selection

6) In the encoder-decoder architecture with attention, where is the context vector typically computed? ***1 point***

- In the encoder
- In the decoder
- Between the encoder and decoder (selected)
- After the decoder

Yes, the answer is correct.

12 (assessment?name=300)

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Score: 1
Accepted Answers:
Between the encoder and decoder

7) Choose the correct statement with respect to the attention mechanism in the encoder-decoder model ***1 point***

- Attention mechanism can't be used for images
- Only important features get high weights in the attention mechanism
- Attention mechanism is not suitable for tasks like Machine Translation
- None of these

Yes, the answer is correct.
Score: 1
Accepted Answers:
Only important features get high weights in the attention mechanism

8) What is the purpose of the softmax function in the attention mechanism? ***1 point***

- To normalize the attention weights
- To compute the dot product between the query and key vectors
- To compute the element-wise product between the query and key vectors
- To apply a non-linear activation function to the attention weights

Yes, the answer is correct.
Score: 1
Accepted Answers:
To normalize the attention weights

9) Which of the following is a major advantage of using an attention mechanism in an encoder-decoder model? ***1 point***

- Reduced computational complexity
- Improved generalization to new data
- Reduced risk of overfitting
- None of These

Yes, the answer is correct.
Score: 1
Accepted Answers:
Improved generalization to new data

10) Which of the following output functions is most commonly used in the decoder of an encoder-decoder model for translation tasks? ***1 point***

- Sigmoid
- ReLU
- Softmax
- Tanh

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