Congratulations! You passed!

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Go to next item

1. A Transformer Network processes sentences from left to right, one word at a time. **1 / 1 point**

- ○ True
- ◉ False

Expand

Correct
A Transformer Network can ingest entire sentences all at the same time.

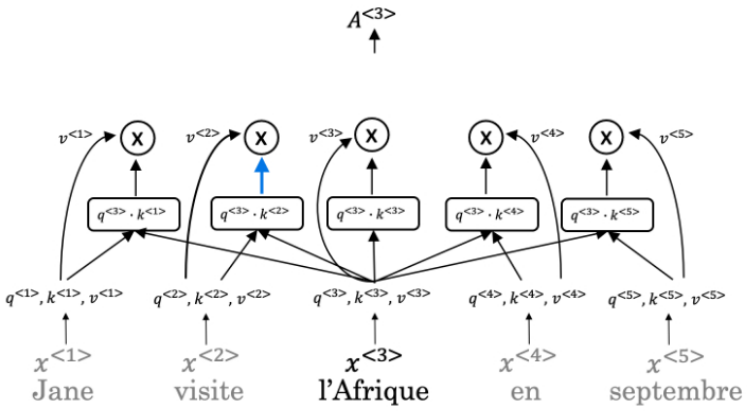
2. Transformer Network methodology is taken from: **1 / 1 point**

- ○ GRUs and LSTMs
- ◉ Attention Mechanism and CNN style of processing.
- ○ RNN and LSTMs
- ○ Attention Mechanism and RNN style of processing.

Expand

Correct
Transformer architecture combines the use of attention based representations and a CNN convolutional neural network style of processing.

3. What are the key inputs to computing the attention value for each word? **1 / 1 point**



- ○ The key inputs to computing the attention value for each word are called the query, knowledge, and vector.

- (●) The key inputs to computing the attention value for each word are called the query, key, and value.
- ( ) The key inputs to computing the attention value for each word are called the quotation, key, and vector.
- ( ) The key inputs to computing the attention value for each word are called the quotation, knowledge, and value.

Expand

Correct
The key inputs to computing the attention value for each word are called the query, key, and value.

4. What letter does the "?" represent in the following representation of *Attention*? **1 / 1 point**

$$Attention(Q, K, V) = softmax(\frac{QK^T}{\sqrt{d_?}})V$$

- (●) k
- ( ) v
- ( ) t
- ( ) q

Expand

Correct
k is represented by the $?$ in the representation.

5. Are the following statements true regarding Query (Q), Key (K) and Value (V)? **0 / 1 point**

Q = interesting questions about the words in a sentence

K = qualities of words given a Q

V = specific representations of words given a Q

- ( ) True
- (●) False

Expand

Incorrect
To revise the concept watch the lecture ; Q = interesting questions about the words in a sentence, K = qualities of words given a Q, V = specific representations of words given a Q

6. $\boldsymbol{Attention(W_i^Q Q, W_i^K K, W_i^V V)}$ **1 / 1 point**

i here represents the computed attention weight matrix associated with the ith "word" in a sentence.

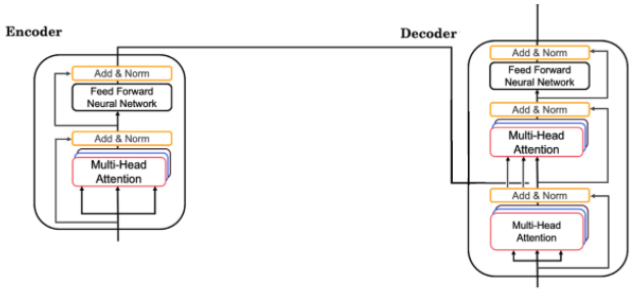
- (●) False
- ( ) True

Expand

Correct

Correct! i here represents the computed attention weight matrix associated with the ith "head" (sequence).

7. Following is the architecture within a Transformer Network ***(without displaying positional encoding and output layers(s)).*** **1 / 1 point**



What is generated from the output of the *Decoder's* first block of *Multi-Head Attention*?

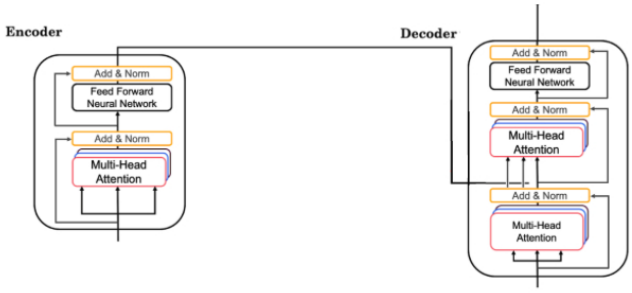
- V
- K
- Q

Expand

Correct

This first block's output is used to generate the Q matrix for the next Multi-Head Attention block.

8. Following is the architecture within a Transformer Network ***(without displaying positional encoding and output layers(s)).*** **1 / 1 point**



What does the output of the *encoder* block contain?

- Contextual semantic embedding and positional encoding information
- Softmax layer followed by a linear layer.
- Prediction of the next word.
- Linear layer followed by a softmax layer.

Expand

Correct
The output of the block contains contextual semantic embedding and positional encoding information.

9. Which of the following statements is true? **1 / 1 point**

- The transformer network differs from the attention model in that only the attention model contains positional encoding.
- The transformer network is similar to the attention model in that neither contain positional encoding.
- The transformer network is similar to the attention model in that both contain positional encoding.
- (selected) The transformer network differs from the attention model in that only the transformer network contains positional encoding.

Expand

Correct
Positional encoding allows the transformer network to offer an additional benefit over the attention model.

10. Which of these is ***not*** a good criterion for a good positional encoding algorithm? **1 / 1 point**

- The algorithm should be able to generalize to longer sentences.
- (selected) It should output a common encoding for each time-step (word's position in a sentence).
- Distance between any two time-steps should be consistent for all sentence lengths.
- It must be deterministic.

Expand

Correct
This is not a good criterion for a good positional encoding algorithm.