

Quiz 1: Coursework

The Preprocessing Step

***Required**

1. Please enter your name: *

Preprocessing the data

Let us consider the following corpus

Raw Corpus

$\mathcal{D}_1 =$ Neural Networks are awesome

$\mathcal{D}_2 =$ LSTMs are Sequential Neural Networks

$\mathcal{D}_3 =$ Attention Models are awesome

The word2idx dictionary associated with the Raw Corpus is the following dictionary:

```
Word2idx = {      Neural      : 1,
               Networks      : 2,
                  are         : 3,
               awesome       : 4,
               LSTMs         : 5,
               Sequential     : 6,
               Attention      : 7,
               Models         : 8 }
```

2. What is the one hot vector representing the word "Sequential" ?

1 point

Mark only one oval.

- ☐ 6
- ☐ [0, 0, 0, 0, 0, 1, 0, 0]
- ☐ [0, 0, 0, 0, 0, 0, 6, 0, 0]

3. Using the word2idx dictionary, which answer represents the processed raw corpus into lists of integers, as explained in the Coursework 1 point

(a)

$$\begin{aligned}\mathcal{D}_1 &= [0, 0, 0, 1] \\ \mathcal{D}_2 &= [0, 1, 0, 0, 0] \\ \mathcal{D}_3 &= [0, 0, 1, 0]\end{aligned}$$

(b)

$$\begin{aligned}\mathcal{D}_1 &= [1, 2, 3, 4] \\ \mathcal{D}_2 &= [5, 3, 6, 1, 2] \\ \mathcal{D}_3 &= [7, 8, 3, 4]\end{aligned}$$

(c)

$$\begin{aligned}\mathcal{D}_1 &= [1, 1, 1, 1, 0, 0, 0, 0] \\ \mathcal{D}_2 &= [1, 1, 1, 0, 1, 1, 0, 0] \\ \mathcal{D}_3 &= [0, 0, 1, 1, 0, 0, 1, 1]\end{aligned}$$

Mark only one oval.

☐ (a)

☐ (b)

☐ (c)

Introducing the Context Words

Let us consider a context size = 2 in the rest of the section

4. What are the context words associated with the center word 5 ? 1 point

$$\mathcal{D}_2 = [5, 3, 6, 1, 2]$$

Mark only one oval.

☐ [3, 6, 1]

☐ [1, 2, 3, 6]

☐ [3, 6]

5. What are the context words associated with the center word 3 ?

1 point

$$\mathcal{D}_2 = [5 , 3 , 6 , 1 , 2]$$

Mark only one oval.

- ☐ [5, 6]
☐ [5, 6, 1]
☐ [6, 1, 2]

6. What are the context words associated with the center word 6 ?

1 point

$$\mathcal{D}_2 = [5 , 3 , 6 , 1 , 2]$$

Mark only one oval.

- ☐ [3, 6]
☐ [3, 6, 2]
☐ [5, 3, 1, 2]

7. What are the context words associated with the center word 1 ?

1 point

$$\mathcal{D}_2 = [5 , 3 , 6 , 1 , 2]$$

Mark only one oval.

- ☐ [3, 6, 2]
☐ [6, 2]
☐ [2]

8. What are the context words associated with the center word 2 ?

1 point

$$\mathcal{D}_2 = [5 , 3 , 6 , 1 , \textcircled{2}]$$

Mark only one oval.

- ☐ [6, 1]
- ☐ [3, 6, 1]
- ☐ [5, 3, 6, 1]

9. What is the sum of the total number of context words associated with each center word in document \mathcal{D}_2 ?

1 point

Mark only one oval.

- ☐ 12
- ☐ 9
- ☐ 14

10. What is the sum of the total number of context words associated with each center word in document \mathcal{D}_2 , as a function of n_2 (the length of document \mathcal{D}_2) ? (with the assumption $n_2 \geq 4$).

2 points

$$\mathcal{D}_2 = [w_2^1, w_2^2, \dots, w_2^t, \dots, w_2^{n_2-1}, w_2^{n_2}]$$

Mark only one oval.

- ☐ $10 + 4 \cdot (n_2 - 4)$
- ☐ $2 \cdot n_2 + 4$
- ☐ $3 \cdot n_2 - 1$

11. Any question ?

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