05_week2_quiz

Natural Language Processing & Word Embeddings

测验, 10 个问题
第 1 个问题
1
point

1。第 1 个问题

Suppose you learn a word embedding for a vocabulary of 10000 words. Then the embedding vectors should be 10000 dimensional, so as to capture the full range of variation and meaning in those words.

True

False

第 2 个问题
1
point

2。第 2 个问题

What is t-SNE?

A linear transformation that allows us to solve analogies on word vectors

A non-linear dimensionality reduction technique

A supervised learning algorithm for learning word embeddings

An open-source sequence modeling library

第 3 个问题
1
point

3。第 3 个问题

Suppose you download a pre-trained word embedding which has been trained on a huge corpus of text. You then use this word embedding to train an RNN for a language task of recognizing if someone is happy from a short snippet of text, using a small training set.

x (input text)	y (happy?)
I'm feeling wonderful today!	1
I'm bummed my cat is ill.	0
Really enjoying this!	1

Then even if the word “ecstatic” does not appear in your small training set, your RNN might reasonably be expected to recognize “I’m ecstatic” as deserving a label $y=1$.

True

False

第 4 个问题
1
point

4。第 4 个问题

Which of these equations do you think should hold for a good word embedding? (Check all that apply)

$e_{boy}-e_{girl}\approx e_{brother}-e_{sister}$

$e_{boy}-e_{girl}\approx e_{sister}-e_{brother}$

$e_{boy}-e_{brother}\approx e_{girl}-e_{sister}$

$e_{boy}-e_{brother}\approx e_{sister}-e_{girl}$

第 5 个问题
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point

5。第 5 个问题

Let E be an embedding matrix, and let e_{1234} be a one-hot vector corresponding to word 1234. Then to get the embedding of word 1234, why don’t we call $E*e_{1234}$ in Python?

It is computationally wasteful.

The correct formula is E^T*e_{1234}

This doesn’t handle unknown words (<UNK>).

None of the above: Calling the Python snippet as described above is fine.

第 6 个问题
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point

6。第 6 个问题

When learning word embeddings, we create an artificial task of estimating $P(target \mid context)$. It is okay if we do poorly on this artificial prediction task; the more important by-product of this task is that we learn a useful set of word embeddings.

True

False

第 7 个问题
1
point

7。第 7 个问题

In the word2vec algorithm, you estimate $P(t|c)$, where t is the target word and c is a context word. How are t and c chosen from the training set? Pick the best answer.

c is the one word that comes immediately before t.

c is the sequence of all the words in the sentence before t.

c is a sequence of several words immediately before t.

c and t are chosen to be nearby words.

第 8 个问题
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point

8。第 8 个问题

Suppose you have a 10000 word vocabulary, and are learning 500-dimensional word embeddings. The word2vec model uses the following softmax function:

$P(t|c)=e\theta tTec\sum t'=110000e\theta t'Tec$

Which of these statements are correct? Check all that apply.

θt and ec are both 500 dimensional vectors.

θt and ec are both 10000 dimensional vectors.

θt and ec are both trained with an optimization algorithm such as Adam or gradient descent.

After training, we should expect θt to be very close to ec when t and c are the same word.

第 9 个问题
1
point

9。第 9 个问题

Suppose you have a 10000 word vocabulary, and are learning 500-dimensional word embeddings.The GloVe model minimizes this objective:

$\min\sum i=110,000\sum j=110,000f(Xij)(\theta iTej+bi+bj'-\log Xij)2$

Which of these statements are correct? Check all that apply.

θ_i and e_j should be initialized to 0 at the beginning of training.

θ_i and e_j should be initialized randomly at the beginning of training.

X_{ij} is the number of times word i appears in the context of word j.

The weighting function $f(.)$ must satisfy $f(0)=0$.

第 10 个问题
1
point

10。第 10 个问题

You have trained word embeddings using a text dataset of m_1 words. You are considering using these word embeddings for a language task, for which you have a separate labeled dataset of m_2 words. Keeping in mind that using word embeddings is a form of transfer learning, under which of these circumstance would you expect the word embeddings to be helpful?

$m_1 >> m_2$

$m_1 << m_2$

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