축하합니다! 통과하셨습니다!

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다음 항목으로 이동

1. Suppose you learn a word embedding for a vocabulary of 10000 words. Then the embedding vectors could be 10000 dimensional, so as to capture the full range of variation and meaning in those words. 1 / 1점

- (•) False
- ( ) True

더 보기

맞습니다
The dimension of word vectors is usually smaller than the size of the vocabulary. Most common sizes for word vectors range between 50 and 1000.

2. True/False: t-SNE is a linear transformation that allows us to solve analogies on word vectors. 1 / 1점

- (•) False
- ( ) True

더 보기

맞습니다
tr-SNE is a non-linear dimensionality reduction technique.

3. 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. 1 / 1점

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

더 보기

맞습니다
Yes, word vectors empower your model with an incredible ability to generalize. The vector for "ecstatic" would contain a positive/happy connotation which will probably make your model classify the sentence as a "1".

4. Which of these equations do you think should hold for a good word embedding? (Check all that apply) 1 / 1점

- [x] $e_{man} - e_{woman} \approx e_{king} - e_{queen}$

Correct
The order of words is correct in this analogy.

- [ ] $e_{man} - e_{king} \approx e_{queen} - e_{woman}$
- [x] $e_{man} - e_{king} \approx e_{woman} - e_{queen}$

Correct
The order of words is correct in this analogy.

- [ ] $e_{man} - e_{woman} \approx e_{queen} - e_{king}$

더 보기

맞습니다
Great, you got all the right answers.

5. Let E be an embedding matrix, and let o_{1234} be a one-hot vector corresponding to word 1234. Then to get the embedding of word 1234, why don't we call $E * o_{1234}$ in Python? 1 / 1점

- ( ) This doesn't handle unknown words (<UNK>).
- ( ) None of the above: calling the Python snippet as described above is fine.
- (•) It is computationally wasteful.
- ( ) The correct formula is $E^T * o_{1234}$

더 보기

맞습니다
Yes, the element-wise multiplication will be extremely inefficient.

6. 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. 1 / 1점

- ( ) False
- (•) True

더 보기

맞습니다

7. In the word2vec algorithm, you estimate $P(t \mid c)$, 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. 1 / 1점

- 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.
- Typesetting math: 100% that comes immediately before t

더 보기

맞습니다

8. Suppose you have a 10000 word vocabulary, and are learning 100-dimensional word embeddings. The word2vec model uses the following softmax function: 1 / 1점

$$P(t \mid c) = \frac{e^{\theta_t^T e_c}}{\sum_{t'=1}^{10000} e^{\theta_{t'}^T e_c}}$$

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

- [x] θ_t and e_c are both 100 dimensional vectors.
  - Correct
- [ ] After training, we should expect θ_t to be very close to e_c when t and c are the same word.
- [x] θ_t and e_c are both trained with an optimization algorithm.
  - Correct
    To review this concept watch the *Word2Vec* lecture.
- [ ] θ_t and e_c are both 10000 dimensional vectors.

더 보기

맞습니다
Great, you got all the right answers.

9. Suppose you have a 10000 word vocabulary, and are learning 500-dimensional word embeddings. The GloVe model minimizes this objective: 0 / 1점

$$\min \sum_{i=1}^{10,000} \sum_{j=1}^{10,000} f(X_{ij})(\theta_i^T e_j + b_i + b_j' - log X_{ij})^2$$

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] Theoretically, the weighting function $f(.)$ must satisfy $f(0) = 0$
  - Correct
- [x] X_{ij} is the number of times word j appears in the context of word i.
  - Correct

더 보기

틀립니다
You didn't select all the correct answers

10. You have trained word embeddings using a text dataset of s_1 words. You are considering using these word embeddings for a language task, for which you have a separate labeled dataset of s_2 words. Keeping in mind that using word embeddings is a form of transfer learning, under which of these circumstances would you expect the word embeddings to be helpful? 1 / 1점

- $s_1 >> s_2$
- $s_1 << s_2$

더 보기

맞습니다
s_1 should transfer to s_2