

The GloVe approach

1. The GloVe approach is

1 point

Mark only one oval.

- ☐ an Unsupervised Learning Algorithm
- ☐ A Supervised Learning Algorithm

2. The GloVe approach can be summarized as follows:

1 point

Mark only one oval.

- ☐ A Singular Value Decomposition on the co-occurrence matrix
- ☐ A Matrix Factorization on the logarithm of the co-occurrence matrix

Co-occurrence Matrix

3. Let us consider the following corpus composed of three documents. Let i be the index of the word "algorithm" and j the index of the word "unsupervised". if the window size is 3, what would be X_{ij} ?

2 points

- The GloVe **algorithm** is an unsupervised learning **algorithm**
- We create low dimensional vectors using the unsupervised Word2vec **algorithm**
- The Matrix Factorization **algorithm** is used for generating unsupervised low dimensional word representations

Mark only one oval.

- ☐ 1
- ☐ 3
- ☐ 5

4. Same question with a window size of 5. What would be $X_{\{ij\}}$?

2 points

Mark only one oval.

- ☐ 2
- ☐ 4
- ☐ $\log(\pi) + 2$

Regularization

5. What technique consists in adding a penalty term to the loss function in order to avoid the overfitting problem

2 points

$$J = \sum_{i=1}^V \sum_{j=1}^V f(X_{ij})(\log X_{ij} - W_i^T \tilde{W}_j - b_i - \tilde{b}_j)^2 + \lambda(\|W\|_F^2 + \|\tilde{W}\|_F^2 + \|b\|_2^2 + \|\tilde{b}\|_2^2)$$

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- ☐ Dropout
- ☐ Weight Regularization

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