## The GloVe approach

The GloVe approach is

• an Unsupervised Learning Algorithm

A Supervised Learning Algorithm

The GloVe approach can be summarized as follows:

A Singular Value Decomposition on the co-occurence matrix

• A Matrix Factorization on the logarithm of the co-occurence matrix

**Co-occurence Matrix** 

1 point

1 point

Let us consider the following corpus compose of three documents. Let i be the index 2 points of the word "algorithm" and j the index of the word "unsupervised". if the window size is 3, what would be X {ij}?

- The GloVe algorithm is un 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

$\bigcirc$ 1	
3	
5	
Same question with a window size of 5. What would be X_{ij} ?	2 points
O 2	
4	
O log(pi) + 2	

Regularization

What technique consists in adding a penalty term to the loss function in order to 2 points avoid the overfitting problem

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

Dropout

Weight Regularization



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