

Unit 9 - Week 7

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Assignment 7

The due date for submitting this assignment has passed. Due on 2019-09-18, 23:59 IST.
 As per our records you have not submitted this assignment.

1) Which of the following type of relations can't be captured by word2vec (CBOW or Skipgram)? 1 point

1. Analogy (A:B::C:?)
2. Antonymy
3. Polysemy
4. All of the above

1.
 2.
 3.
 4.

No, the answer is incorrect.
 Score: 0

Accepted Answers:
 2.
 3.

2) Which of the following is the correct expression for cosine similarity between any two word vectors $u, v \in \mathcal{R}^d$. 1 point

1. $\frac{u^T v}{\|u\| \|v\|}$
2. $\frac{u^T v}{\|u\|}$
3. $u^T v$
4. $\| \frac{u}{\|u\|} - \frac{v}{\|v\|} \|^2$

1.
 2.
 3.
 4.

No, the answer is incorrect.
 Score: 0

Accepted Answers:
 1.

3) What is the dimension of the word vectors when using one-hot representation for words? V : word vocabulary 1 point

1. $|V|$
2. d , where $d \ll |V|$
3. $2d$, where $d \ll |V|$
4. None of the above

1.
 2.
 3.
 4.

No, the answer is incorrect.
 Score: 0

Accepted Answers:
 1.

4) Which of the following distance metric(s) is(are) generally used for measuring distance between two word probability distributions, say, P and Q ? V : Word vocab 1 point

1. $\mathbb{E}_p \left[\log \frac{P_{w_i}}{Q_{w_i}} \right]$ where, $w_i \in V$
2. $\frac{1}{|V|} \sum_{w_i \in V} (P_{w_i} - Q_{w_i})^2$
3. $\frac{1}{|V|} \sum_{w_i \in V} \left[\log \frac{P_{w_i}}{Q_{w_i}} \right]$
4. None of the above.

1.
 2.
 3.
 4.

No, the answer is incorrect.
 Score: 0

Accepted Answers:
 1.

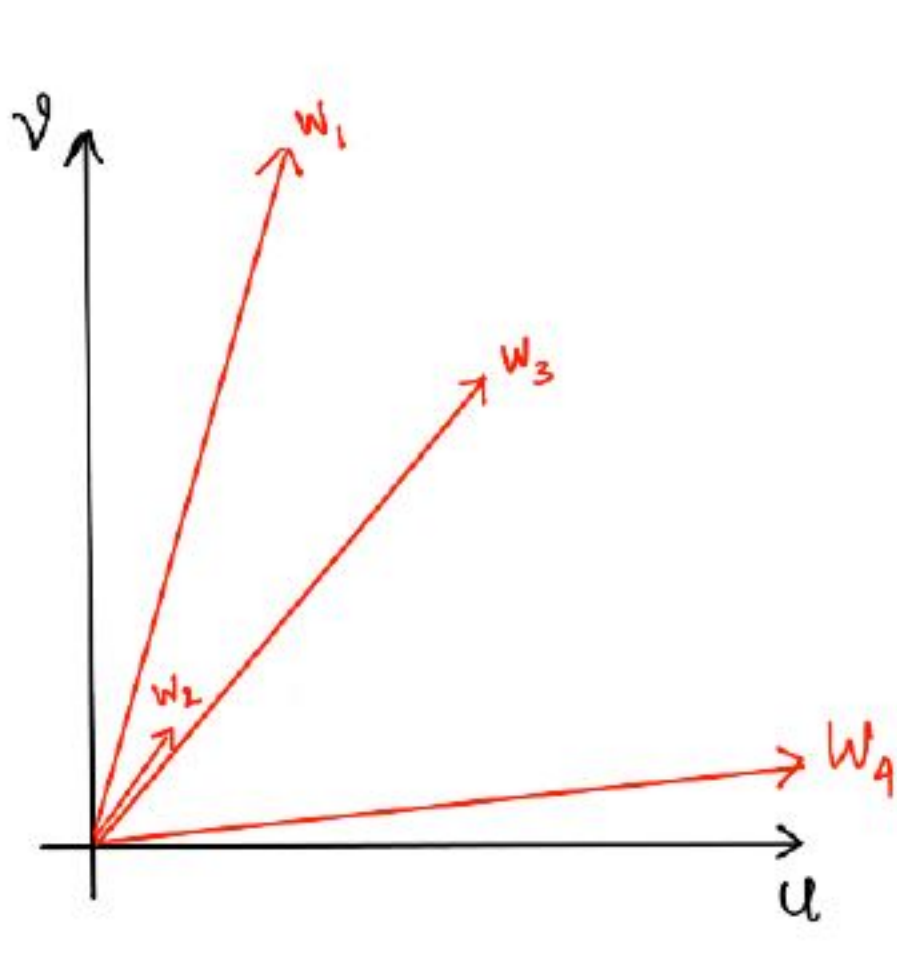
5) Understanding the relation between two pairs of words is an example of, 1 point

1. Referential Semantics
2. Differential Semantics
3. Both a and b
4. None of the above

1.
 2.
 3.
 4.

No, the answer is incorrect.
 Score: 0

Accepted Answers:
 2.

6) In the following Figure  which of the following is/are true about the word vectors for words w_1, w_2, w_3, w_4 ? $sim(x, y)$: cosine similarity between x and y . 1 point

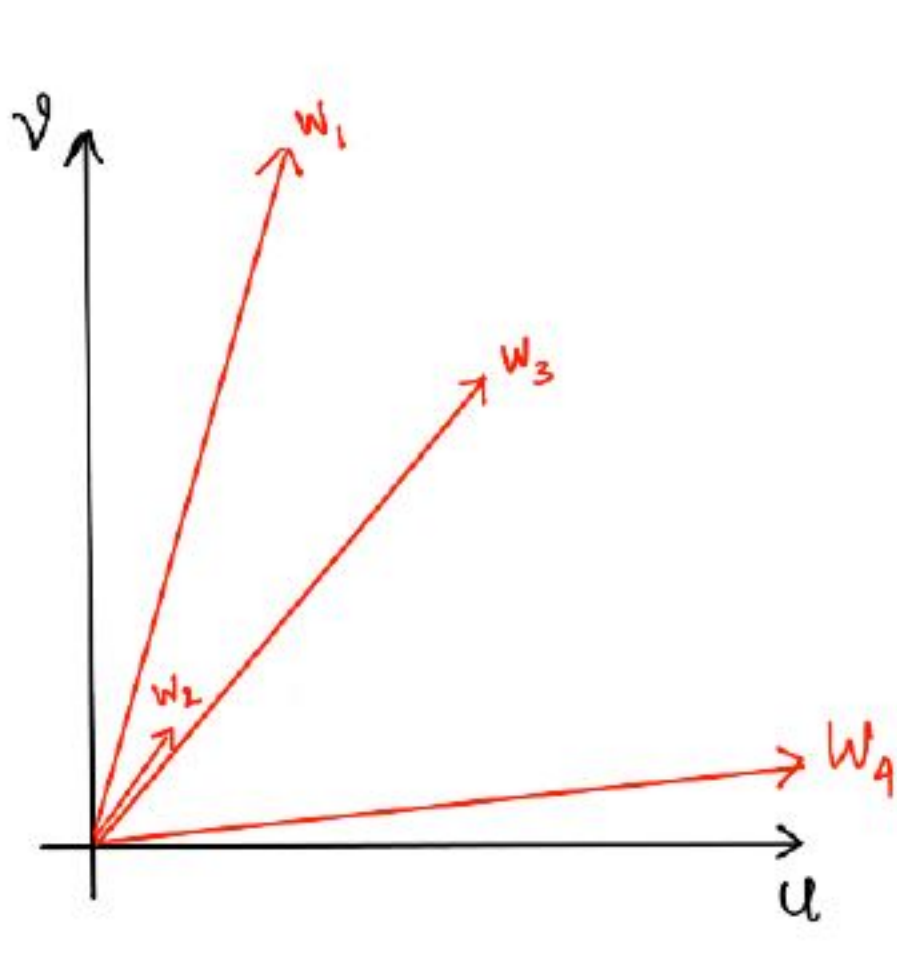


Figure 1: Figure for Question 6

1. $sim(w_1, w_2) < sim(w_1, w_3)$
2. $sim(w_1, w_2) > sim(w_1, w_3)$
3. $sim(w_2, w_3) < sim(w_2, w_4)$
4. $sim(w_1, w_4) < sim(w_2, w_3)$

1.
 2.
 3.
 4.

No, the answer is incorrect.
 Score: 0

Accepted Answers:
 2.
 4.

7) Which of the following would be an incorrect way of measuring importance of word w_i in some context D_j ? D is the collection of all documents in corpus, $N = |D|$ and N_i is the number of documents in which w_i has appeared. f_{ij} is the number of times w_i has appeared in D_j . 1 point

1. $\frac{f_{ij}}{|D_j| \times N_i}$
2. $\frac{1 + \log(f_{ij})}{N_i}$, if $f_{ij} \geq 1$, otherwise 0
3. $\frac{(1 + \log(f_{ij})) \times N_i}{N}$, if $f_{ij} \geq 1$, otherwise 0
4. $(1 + \log(f_{ij})) \times \log(1 + \frac{N}{N_i})$, if $f_{ij} \geq 1$, otherwise 0

1.
 2.
 3.
 4.

No, the answer is incorrect.
 Score: 0

Accepted Answers:
 3.

8) What is the value of $PMI(w_1, w_2)$ for $C(w_1) = 1000, C(w_2) = 200, C(w_1, w_2) = 15, N = 100000$? Use base-2 logarithms, if required. N : Total number of documents. $C(w_i)$: Number of documents, w_i has appeared in. $C(w_i, w_j)$: Number of documents where both the words have appeared in. 1 point

1. 0.875
2. 2.907
3. 2.015
4. 3.137

1.
 2.
 3.
 4.

No, the answer is incorrect.
 Score: 0

Accepted Answers:
 2.

9) Which of the following can cause term mismatch problem? 1 point

1. Typos
2. Different words with same meaning
3. Abbreviations
4. All of the above

1.
 2.
 3.
 4.

No, the answer is incorrect.
 Score: 0

Accepted Answers:
 2.
 3.

10) Which of the following methods can't be used for learning word vectors from a word co-occurrence matrix? 1 point

1. CBOW
2. PCA
3. SVD
4. None of the above

1.
 2.
 3.
 4.

No, the answer is incorrect.
 Score: 0

Accepted Answers:
 1.