

<https://swayam.gov.in>https://swayam.gov.in/nc_details/NPTEL

cs22b2020@iiitdm.ac.in ▾

[NPTEL \(https://swayam.gov.in/explorer?ncCode=NPTEL\)](https://swayam.gov.in/explorer?ncCode=NPTEL) » Natural Language Processing (course)

Course outline

About NPTEL
()

How does an
NPTEL online
course work?
()

Week 0 ()

Week 1 ()

Week 2 ()

Week 3 ()

Week 4 ()

Week 5 ()

Week 6 ()

Week 7 ()

● Lecture 31 :
Distributional

Week 7 : Assignment 7

The due date for submitting this assignment has passed.

Due on 2024-03-13, 23:59 IST.

Assignment submitted on 2024-03-11, 20:55 IST

1)

1 point

Suppose you have a raw text corpus and you compute word co occurrence matrix from there. Which of the following algorithm(s) can you utilize to learn word representations? (Choose all that apply)

- a. CBOW
- b. SVM
- c. PCA
- d. Bagging

- ☒ a.
- ☐ b.
- ☒ c.
- ☐ d.

Yes, the answer is correct.

Score: 1

Accepted Answers:

- a.
- c.

2)

1 point

Semantics -
Introduction
(unit?
unit=66&lesson
=67)

● Lecture 32 :
Distributional
Models of
Semantics
(unit?
unit=66&lesson
=68)

● Lecture 33 :
Distributional
Semantics :
Applications,
Structured
Models (unit?
unit=66&lesson
=69)

● Lecture 34 :
Word
Embeddings -
Part I (unit?
unit=66&lesson
=70)

● Lecture 35 :
Word
Embeddings -
Part II (unit?
unit=66&lesson
=71)

○ Week 7 -
Lecture
Materials (unit?
unit=66&lesson
=72)

● Quiz: Week 7 :
Assignment 7
(assessment?
name=212)

○ Week 7
Feedback Form
(unit?
unit=66&lesson
=187)

● Week 7 :
Assignment

What is the method for solving word analogy questions like, given A, B and D, find C such that $A:B::C:D$, using word vectors?

- a. $v_c = v_a + (v_b - v_d)$, then use cosine similarity to find the closest word of v_c .
- b. $v_c = v_a + (v_d - v_b)$ then do dictionary lookup for v_c .
- c. $v_c = v_d + (v_a - v_b)$ then use cosine similarity to find the closest word of v_c .
- d. $v_c = v_d + (v_a - v_b)$ then do dictionary lookup for v_c .
- e. None of the above

- ☐ a.
- ☐ b.
- ☒ c.
- ☐ d.
- ☐ e.

Yes, the answer is correct.

Score: 1

Accepted Answers:

c.

3)

1 point

What is the value of $PMI(w_1, w_2)$ for $C(w_1) = 250$, $C(w_2) = 1000$, $C(w_1, w_2) = 160$, $N = 100000$?
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.
Note: Use base 2 in logarithm.

- a. 4
- b. 5
- c. 6
- d. 5.64

- ☐ a.
- ☐ b.
- ☒ c.
- ☐ d.

Yes, the answer is correct.

Score: 1

Accepted Answers:

c.

4)

2 points

Solution (unit?
unit=66&lesson
=165)

Week 8 ()

Week 9 ()

Week 10 ()

Week 11 ()

Week 12 ()

Download
videos ()

Text
Transcripts ()

Books ()

Problem
Solving
Session - Jan
2024 ()

Given two binary word vectors w_1 and w_2 as follows:

$w_1 = [1010101010]$

$w_2 = [0011111100]$

Compute the Dice and Jaccard similarity between them.

- a. 6/11, 3/8
- b. 10/11, 5/6
- c. 4/9, 2/7
- d. 5/9, 5/8

- ☒ a.
☐ b.
☐ c.
☐ d.

Yes, the answer is correct.

Score: 2

Accepted Answers:

a.

5)

2 points

Consider two probability distributions for two words be p and q .

Compute their similarity scores with KL-divergence.

$p = [0.20, 0.75, 0.50]$

$q = [0.90, 0.10, 0.25]$

Note: Use base 2 in logarithm.

- a. 4.704, 1.720
- b. 1.692, 0.553
- c. 2.246, 1.412
- d. 3.213, 2.426

- ☐ a.
☐ b.
☒ c.
☐ d.

Yes, the answer is correct.

Score: 2

Accepted Answers:

c.

6)

2 points

Consider the following word co-occurrence matrix given below.
Compute the cosine similarity between
(i) w1 and w2, and (ii) w1 and w3.

	w4	w5	w6
w1	2	8	5
w2	4	9	7
w3	1	2	3

- a. 0.773, 0.412
- b. 0.881, 0.764
- c. 0.987, 0.914
- d. 0.897, 0.315

- ☐ a.
- ☐ b.
- ☒ c.
- ☐ d.

Yes, the answer is correct.
Score: 2

Accepted Answers:
c.

7)

1 point

Which of the following type of relations can be captured by word2vec (CBOW or Skipgram)?

- a. Analogy (A:B::C:?)
- b. Antonymy
- c. Polysemy
- d. All of the above

- ☐ a.
- ☐ b.
- ☐ c.
- ☒ d.

No, the answer is incorrect.
Score: 0

Accepted Answers:
a.

