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NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Introduction to Large Language Models (LLMs)
(course)



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Course outline

About NPTEL
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How does an
NPTEL online
course work?
()

Week 1 ()

Week 2 ()

Week 3 ()

Week 4 : Assignment 4

The due date for submitting this assignment has passed.

Due on 2025-02-19, 23:59 IST.

Assignment submitted on 2025-02-10, 22:41 IST

1) What is the main drawback of representing words as one-hot vectors?

1 point

- ☒ They cannot capture semantic similarity between words.
- ☐ They are computationally inefficient.
- ☐ They cannot incorporate word order effectively.
- ☐ They are not robust to unseen words.

Yes, the answer is correct.

Score: 1

Accepted Answers:

They cannot capture semantic similarity between words.

2) What is the key concept underlying Word2Vec?

1 point

- ☐ Ontological semantics
- ☐ Decompositional semantics
- ☒ Distributional semantics
- ☐ Morphological analysis

Yes, the answer is correct.

Week 4 ()

- ☐ Lec 07 : Word Representation : Word2Vec & fastText (unit? unit=36&lesson=37)
- ☐ Lec 08 : Word Representation : GloVe (unit? unit=36&lesson=38)
- ☐ Lec 09 : Tokenization Strategies (unit? unit=36&lesson=39)
- ☒ Lecture Material (unit? unit=36&lesson=40)
- ☐ Feedback Form (unit? unit=36&lesson=41)

☒ **Quiz: Week 4 : Assignment 4 (assessment? name=42)**

Week 5 ()**Week 6 ()****Week 7 ()****Week 8 ()****Week 9 ()****Week 10 ()****Week 11 ()****Week 12 ()**

Score: 1

Accepted Answers:

Distributional semantics

3) Why is sub-sampling frequent words beneficial in Word2Vec?

1 point

- ☐ It increases the computational cost.
- ☒ It helps reduce the noise from high-frequency words.
- ☐ It helps eliminate redundancy.
- ☐ It prevents the model from learning embeddings for common words.

Yes, the answer is correct.

Score: 1

Accepted Answers:

It helps reduce the noise from high-frequency words.

4) Which word relations cannot be captured by word2vec?

1 point

- ☒ Polysemy
- ☐ Antonymy
- ☐ Analogy
- ☐ All of the these

Partially Correct.

Score: 0.5

Accepted Answers:

*Polysemy**Antonymy***For Question 5 to 6, Consider the following word-word matrix:**

	w_6	w_7	w_8	w_9	w_{10}	w_{11}	w_{12}
w_1	1	5	3	0	1	5	7
w_2	4	2	4	1	6	2	0
w_3	2	1	9	2	5	1	5
w_4	5	0	7	4	2	0	4
w_5	3	5	1	0	1	2	1

5) Compute the cosine similarity between w_2 and w_5 .**1 point**

- ☐ 0.516
- ☐ 0.881
- ☐ 0.705
- ☒ 0.641

Yes, the answer is correct.

**Year 2025
Solutions ()**

Score: 1

Accepted Answers:

0.641

6) Which word is most similar to w_1 based on cosine similarity?**4 points**

- ☐ w_2
- ☐ w_3
- ☐ w_4
- ☒ w_5

Yes, the answer is correct.

Score: 4

Accepted Answers:

 w_5

7) What is the difference between CBOW and Skip-Gram in Word2Vec?

1 point

- ☐ CBOW predicts the context word given the target word, while Skip-Gram predicts the target word given the context words.
- ☒ CBOW predicts the target word given the context words, while Skip-Gram predicts the context words given the target word.
- ☐ CBOW is used for generating word vectors, while Skip-Gram is not.
- ☐ Skip-Gram uses a thesaurus, while CBOW does not.

Yes, the answer is correct.

Score: 1

Accepted Answers:

CBOW predicts the target word given the context words, while Skip-Gram predicts the context words given the target word.