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 NPTEL (<https://swayam.gov.in/explorer?ncCode=NPTEL>) » Deep Learning - IIT Ropar (course)


Course outline

How does an NPTEL online course work?

Week 0

Week 1

Week 2

Week 3

week 4

Week 5

Week 6

Week 7

Week 8

Week 9

☐ One-hot representations

Assignment 9

The due date for submitting this assignment has passed.

Due on 2021-03-24, 23:59 IST.

Assignment submitted on 2021-03-24, 22:10 IST

1) Which of the following is not true with respect to one-hot representation?

1 point

- ☐ It is a representation of categorical variables as binary vectors.
- ☐ It requires that the categorical values be mapped to integer values.
- ☐ Each integer value is represented as a binary vector, that is, all zero values except the index of the integer, which is marked with a 1.
- ☒ The representation captures the notion of similarity.

Yes, the answer is correct.

Score: 1

Accepted Answers:

The representation captures the notion of similarity.

2) Consider a vocabulary 'V' derived from a given corpus using one-hot representation. What is the Euclidean distance and cosine similarity between any 2 words of V?

1 point

- ☐ $\sqrt{2}$ and 1
- ☒ $\sqrt{2}$ and 0
- ☐ 2 and 1
- ☐ 2 and 0

of words (unit?
unit=114&lesson=115)

Yes, the answer is correct.

Score: 1

Accepted Answers:

$\sqrt{2}$ and 0

☐ Distributed Representations of words (unit?
unit=114&lesson=116)

3) The co-occurrence matrix of distributed representation of words suffers from which of the following problems? **1 point**

☐ SVD for learning word representations (unit?
unit=114&lesson=117)

i) It is very sparse.

ii) It is very high dimensional.

iii) It grows with the size of vocabulary.

Choose the correct answer:

☐ SVD for learning word representations (Contd.) (unit?
unit=114&lesson=118)

☐ i and ii

☐ i and iii

☐ ii and iii

☒ i, ii and iii

Yes, the answer is correct.

Score: 1

Accepted Answers:

i, ii and iii

☐ Continuous bag of words model (unit?
unit=114&lesson=119)

☐ Skip-gram model (unit?
unit=114&lesson=120)

4) In the Continuous Bag of Words model, the distributed representations of context (or surrounding words) is combined to predict the word in the middle. **1 point**

☐ Skip-gram model (Contd.) (unit?
unit=114&lesson=121)

☒ True

☐ False

Yes, the answer is correct.

Score: 1

Accepted Answers:

True

☐ Contrastive estimation (unit?
unit=114&lesson=122)

☐ Hierarchical softmax (unit?
unit=114&lesson=123)

☐ GloVe representations (unit?
unit=114&lesson=124)

5) S_1 and S_2 are two statements related to Skip-gram and Continuous bag of words (CBOW). **1 point**

S_1 : Skip-gram works well with a small amount of the training data and represents well even rare words or phrases.

S_2 : Skip-gram is faster to train than the CBOW and slightly better accurate for frequent words.

Choose the correct answer:

☐ Evaluating word representations (unit?
unit=114&lesson=125)

☒ S_1 is true and S_2 is false.

☐ S_1 is false and S_2 is true.

☐ Both S_1 and S_2 are true.

☐ Both S_1 and S_2 are false.

Yes, the answer is correct.

Score: 1

Accepted Answers:

S_1 is true and S_2 is false.

☐ Relation between SVD and Word2Vec (unit?
unit=114&lesson=126)

● Lecture
Material for
Week 9 (unit?
unit=114&lesson=127)

● Quiz:
Assignment 9
(assessment?
name=187)

○ Week 9
Feedback Form
: Deep
Learning - IIT
Ropar (unit?
unit=114&lesson=128)

week 10

Week 11

Week 12

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6) SoftMax function is computationally expensive and this problem can be solved using **1 point**

- ☒ Negative sampling.
☒ Contrastive estimation.
☒ Hierarchical SoftMax.
☐ No solution exists to solve this problem.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Negative sampling.

Contrastive estimation.

Hierarchical SoftMax.

7) In the Skip-gram model, the distributed representation of the input word is used to predict the context. **1 point**

- ☒ True
☐ False

Yes, the answer is correct.

Score: 1

Accepted Answers:

True

8) S_1 and S_2 are two statements related to GloVe. **1 point**

S_1 : GloVe is a hybrid model based on count based and window based models.

S_2 : GloVe does not rely only on local statistics, but uses global statistics to obtain word vectors.

Choose the correct option:

- ☐ S_1 is true and S_2 is false.
☐ S_1 is false and S_2 is true.
☒ Both S_1 and S_2 are true.
☐ Both S_1 and S_2 are false.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Both S_1 and S_2 are true.

9) SVD performs better than prediction-based models on analogy tasks but not on similarity tasks. **1 point**

- ☒ True
☐ False

No, the answer is incorrect.

Score: 0

Accepted Answers:

False

10) S_1 and S_2 are two statements related to Word2vec. Choose the correct option. **1 point**

S_1 : Word2vec is an iterative algorithm wherein the gradient descent is going to update some parameters of the model.

S_2 : The word2vec algorithms include skip-gram and CBOW models, using either hierarchical softmax or negative sampling.

- ☐ S_1 is true and S_2 is false.
- ☐ S_1 is false and S_2 is true.
- ☒ Both S_1 and S_2 are true.
- ☐ Both S_1 and S_2 are false.

Yes, the answer is correct.

Score: 1

Accepted Answers:

Both S_1 and S_2 are true.