



[Unit 5 Reinforcement Learning\(2](#)
[Course](#) > [weeks](#))
6. Word Embeddings

[Lecture 19: Applications: Natural](#)
> [Language Processing](#) >

Audit Access Expires May 11, 2020

You lose all access to this course, including your progress, on May 11, 2020.

6. Word Embeddings

Word Embeddings

**Video**

[Download video file](#)

Transcripts

[Download SubRip \(.srt\) file](#)

[Download Text \(.txt\) file](#)

Understanding Word Embeddings

1 point possible (graded)

Which of the following options is correct about word embeddings presented in the lecture.

- ☐ The goal of word embeddings is to increase the sparsity of the encoded input word features
- ☐ We would like similar words to have word embeddings that are far apart in order to minimize word sense disambiguation
- ☒ One way to learn word embeddings is by maximizing cosine similarity between words with related meaning. ✓
- ☐ To do a good job, word embeddings have to manually encoded by a natural language domain expert

Solution:


We would like to learn word embeddings that are much less sparse than one hot vector based encoding because reducing the sparsity of input features lowers the sample complexity (number of training examples required to do an accurate task) of the downstream text classification task.

In order to do the above, we should cluster the similar or related words together in the embedding dimension space. For instance, the words "dog" and "samoyed" must have similar embedding representations than "dog" and "lipstick".

Word embeddings are practically very useful because they can be learnt without any significant manual effort and they generalize well to completely new tasks.

Submit

You have used 0 of 2 attempts

 Answers are displayed within the problem

Sentence Embeddings vs bag-of-words

1 point possible (graded)

Consider the following two sentences with very different meanings:

(1) I ate pizza with my friend

(2) I ate my friend with pizza

☒ Bag of words encoding approach would lead to identical encodings for both these sentences ✓

☐ Bag of words encoding approach would be able to successfully differentiate the above two sentences

☐ Recurrent neural network (e.g., LSTMs) based approach would lead to identical encodings for both these sentences

☒ Recurrent neural network (e.g., LSTMs) based approach would be able to successfully differentiate the above two sentences ✓

Solution:

Bag of words approach sums up all the word embeddings in order to encode an input sentence. Hence, it cannot capture the ordering of these words within a sentence.

LSTM or Recurrent Neural network based approaches encode an input sentence into a context vector capturing more than just a summation of its constituent parts together.

Submit

You have used 0 of 1 attempt











 Answers are displayed within the problem





Discussion

Hide Discussion

Topic: Unit 5 Reinforcement Learning (2 weeks) :Lecture 19:
Applications: Natural Language Processing / 6. Word
Embeddings

Add a Post

| Show all posts | by recent activity |
|--|--------------------|
| <div> <u>Nice to see you all at the end of the lecture. Good job everyone!</u></div> <div><u>Thanks for you guys to go through the course with us in this difficult period. It is really a speci...</u></div> <div> <u>Staff</u></div> <div>28</div> | |
| <div> <u>thanks</u></div> <div><u>thanks professors barzilay, jakoola for your great lectures and wonderful team.enjoyed,thanks!</u></div> <div></div> <div>3</div> | |
| <div> <u>Thanks</u></div> <div><u>Thanks to professors, all of the staff, TAs !</u></div> <div></div> <div>2</div> | |
| <div> <u>Thank You!!</u></div> <div><u>Thank you Profesors Barzilay, Jakoola and TA's for this amazing course.! This was tough at ti...</u></div> <div></div> <div>2</div> | |
| <div> <u>Thanks [can't believe this is the last video in the course]</u></div> <div><u>Thanks a lot for our great lecturers and TAs.. I can't get enough of learning about these stuff....</u></div> <div></div> <div>2</div> | |
| <div> <u>Thanks</u></div> <div><u>Thank you Professors Barzilay, Jakoola and TA's</u></div> <div></div> <div>29</div> | |
| <div> <u>To which parts of the course she refer to ?</u></div> <div><u>To which parts of the course she refer to when she speak of embedding words in a dense co...</u></div> <div> <u>Community TA</u></div> <div>1</div> | |
| <div> <u>Final exam</u></div> <div><u>Does the final exam include questions for this unit?</u></div> <div></div> <div>2</div> | |

| | | |
|---|---|---|
|  | <u>Kiitos hienoista luennoista</u> | 1 |
| | <u>Thank you both staff and participants, it has been a massive pleasure (and pain of course) to ...</u> | |
|  | <u>Word Embeddings and word meaning ambiguity.</u> | 1 |
|  | <u>Community TA</u> | |
|  | <u>final</u> | 3 |
| | <u>i received a mail saying that the final exam has been released but i am unable to see the final...</u> | |

© All Rights Reserved