Started on	Saturday, 22 June 2024, 11:47 PM
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Question 1

Correct

Marked out of 2.00

Task: Considering **Recurrent Neural Networks** (RNN), select **architectures** that help to increase **long-term dependencies** and mitigate **vanishing gradients**.

Select one or more:

☐ a. Rectified Linear Units

☑ b. Long Short Term Memory cells ✔

☐ c. Inception Modules

☐ d. Residual Blocks

☑ e. Gated Recurrent Unit cells ✔

Die Antwort ist richtig.

The correct answers are: Long Short Term Memory cells, Gated Recurrent Unit cells

Question 2

Partially correct

Marked out of 1.00

Below are statements on word embeddings.

Task: Select all correct statements.

- ☑ a.   Word embeddings can model the relationship between words. ✔
- ☑ b.   Word embedding vectors are typically smaller compared to one-hot encoded word representations. ✔
- ☐ c.   When adding one word to the vocabulary, the dimension of the word embedding space grows by one.
- ☐ d.   Typically word embedding vectors are very sparse and can be efficiently implemented using indexed representations.
- ☐ e.   Words with similar meanings have similar word embedding vectors.
- ☐ f.   One-hot encoded word representations are the same as word embeddings.

Your answer is partially correct.

You have correctly selected 2.
The correct answers are:
Word embeddings can model the relationship between words.,

Words with similar meanings have similar word embedding vectors.,

Word embedding vectors are typically smaller compared to one-hot encoded word representations.

Question 3

Incorrect

Marked out of 1.00

Consider you want to train a **word embedding** for a **vocabulary of 1000 words**. In order to capture the meanings and relations of all words, your **embedding size** should also amount to **1000**.

Question: Is this correct or not?

Select one:

- ◉ True ✗
- ○ False

The correct answer is 'False'.

Question 4

Incorrect

Marked out of 1.00

Consider you want to train a recurrent neural network (RNN) to translate from english to german sentences.

Question: Which RNN architecture is most suited for this task?

○ a. Many-to-many (unsynchronized)

◉ b. Many-to-many (synchronized) ✗

○ c. Many-to-one

○ d. One-to-many

Your answer is incorrect.

The correct answer is:
Many-to-many (unsynchronized)

Question 5

Incorrect

Marked out of 1.00

Question: Using **recurrent neural networks** in **encoder-decoder architecture**, what should be used as **initial hidden input** for the **decoder**?

◉ a. The last encoder output. ✗

○ b. The average encoder output.

○ c. The last encoder hidden state.

○ d. The last decoder hidden state.

○ e. The sum of all encoder hidden states.

○ f. The first encoder hidden state.

○ g. The average of all encoder hidden states.

Your answer is incorrect.

The correct answer is:
The last encoder hidden state.

Question 6

Incorrect

Marked out of 2.00

Consider you successfully trained a **word embedding** on a huge corpus of text.

Question: Which of the following equations do you expect to be valid? Select all that apply.

Select one or more:

- ☑ a. $e_{\text{lounging}} - e_{\text{learning}} \approx e_{\text{pass}} - e_{\text{fail}}$ ✗

- ☐ b. $e_{\text{uncle}} - e_{\text{man}} \approx e_{\text{aunt}} - e_{\text{woman}}$

- ☐ c. $e_{\text{fail}} - e_{\text{lounging}} \approx e_{\text{pass}} - e_{\text{learning}}$

- ☐ d. $e_{\text{uncle}} - e_{\text{man}} \approx e_{\text{woman}} - e_{\text{aunt}}$

- ☑ e. $e_{\text{uncle}} - e_{\text{aunt}} \approx e_{\text{woman}} - e_{\text{man}}$ ✗

Die Antwort ist falsch.

The correct answers are: $e_{\text{fail}} - e_{\text{lounging}} \approx e_{\text{pass}} - e_{\text{learning}}$
, $e_{\text{uncle}} - e_{\text{man}} \approx e_{\text{aunt}} - e_{\text{woman}}$

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