

Q1 Instructions

1 Point

Open notes: The quiz is open notes. You are free to use any content from the course website or from your own personal notes.

No communication: ANY communication with other students about the quiz content is strictly forbidden and will result in a failing grade for the whole class (not just this quiz).

No partial credit: Every question is all or nothing credit. Thus, you must get the answer exactly right to get credit for the question (including SELECT ALL questions). No partial credit will be given on quizzes.

Number Format: When giving numbers as short answers, please give in standard decimal notation with preceding "0." for decimals if needed but no trailing 0s (e.g., "0.15", "2.9", "0.001", "100" but NOT "0.15000" NOR ".15" NOR ".001" NOR "6.0").

Honor Pledge: I assert that I have not received any information about this quiz and will not share any quiz content with anyone else. I understand that any violation of this will result in a failing grade for the whole class (not just this quiz).

Yes, I understand the policies above and assert the honor pledge.

No

Q2

1 Point

Which of the following tasks can be accomplished using self-supervised learning? Select all the correct answers.

Image classification

- ✓ Image colorization (from grayscale to color image)
- ✓ Predicting the sentiment of a sentence

Answer
Speech recognition

Image colorization (from grayscale to color image)

Q3

1 Point

RNNs can only handle fixed-sized sequences.

True

False

Q4

1 Point

RNNs can be used for which of the following tasks (if any):

- ✓ Text generation
- ✓ Text classification

Q5

1 Point

What are some limitations of the windowing approach to handling sequences?

- ✓ The window size is fixed.

Lacks short-range dependencies.

The model's predictions of different windows are very dependent.

Q6

1 Point

Assuming the notation from the slides, what is the correct equation for an RNN module?

$$x_\ell, y_\ell = f_\theta(h_\ell, h_{\ell-1})$$

$$x_\ell, h_\ell = f_\theta(y_\ell, h_{\ell-1})$$

$$x_\ell, h_{\ell-1} = f_\theta(y_\ell, h_\ell)$$

$$y_\ell, h_\ell = f_\theta(x_\ell, h_{\ell-1})$$

$$y_\ell, h_{\ell-1} = f_\theta(x_\ell, h_\ell)$$

Q7

1 Point

RNN algorithms use backpropagation for computing gradients.

True

False

Q8

1 Point

Are LSTMs or GRUs computationally simpler?

LSTM

GRU

Q9

1 Point

What is the maximum value of a gate in GRUs and LSTMs?

3

Q10

1 Point

Which of the following statements about LSTM (Long Short-Term Memory) networks are true? (Select all that apply)

- ✓ LSTM networks are a type of recurrent neural network (RNN) module architecture used for sequence modeling.

LSTMs are only used for natural language processing (NLP) tasks.

- ✓ LSTMs have a mechanism that allows them to update and forget information in the hidden state selectively.
- ✓ LSTMs are capable of capturing long-term dependencies in sequential data.

Q11
1 Point

Which of the following statements about GRU (Gated Recurrent Unit) are true?

GRU is a type of unsupervised learning algorithm used for clustering.

- ✓ GRU has a gating mechanism that allows it to selectively update its hidden state, which helps to address the problem of vanishing gradients.
- ✓ GRU is a type of recurrent neural network (RNN) module used for sequence modeling.

Quiz 10

● Graded

Student

Paloma Arellano

Total Points

9 / 11 pts

Question 1

Instructions

1 / 1 pt

Question 2

(no title)

0 / 1 pt

+ 1 pt Correct

✓ + 0 pts Incorrect

Question 3

(no title)

1 / 1 pt

Question 4

(no title)

1 / 1 pt

Question 5

(no title)

1 / 1 pt

Question 6

(no title)

1 / 1 pt

Question 7

(no title)

1 / 1 pt

Question 8

(no title)

1 / 1 pt

Question 9

(no title)

0 / 1 pt

Question 10

(no title)

1 / 1 pt

Question 11

(no title)

1 / 1 pt