

**Started on** Friday, April 28, 2023, 2:47 PM

**State** Finished

**Completed on** Friday, April 28, 2023, 3:06 PM

**Time taken** 19 mins 4 secs

**Points** 10.00/10.00

**Grade** 100.00 out of 100.00

Question **1**

Correct

1.00 points out of 1.00

The most common uses of recurrent neural networks are for learning from

Select one:

- ☐ images.
- ☐ imbalanced datasets.
- ☒ sequential data. ✓
- ☐ experience, by trial and error.
- ☐ noisy data.
- ☐ an initial state produced by clustering.
- ☐ datasets containing many identical examples.

Your answer is correct.

The correct answer is: sequential data.

Question 2

Correct

1.00 points out of 1.00

In a recurrent neural network

Select one:

- ☒ outputs from one layer can be fed back as inputs to earlier layers. ✓
- ☐ learning focuses on incorrectly categorized inputs, using a process implemented by arranging for the incorrectly categorized inputs to recur more frequently in training sequences.
- ☐ layers close to the outputs are forced to replicate values close to the inputs, so that latent representations recur at least once before outputs are produced.
- ☐ recursion is used rather than iteration for processing all of the layers, both for computing output and for error backpropagation.

Your answer is correct.

The correct answer is: outputs from one layer can be fed back as inputs to earlier layers.

Question 3

Correct

1.00 points out of 1.00

Neural networks in which each node in some layer  $n$  receives inputs from a "receptive field" of nodes in layer  $n - 1$ , with the same weights used for the connections from each receptive field to its corresponding node in layer  $n$ , are called

Select one:

- ☒ "convolutional neural networks." ✓
- ☐ "receptive neural networks."
- ☐ "generative adversarial networks."
- ☐ "Adaline networks."
- ☐ "field-based neural networks."
- ☐ "pulsed neural networks."
- ☐ "recurrent neural networks."

Your answer is correct.

The correct answer is: "convolutional neural networks."

Question 4

Correct

1.00 points out of 1.00

Which of the following refers to a popular kind of recurrent neural network?

Select one:

- ☐ support vector machine
- ☒ long short-term memory ✓
- ☐ fibonacci heap
- ☐ convolutional neural network
- ☐ multilayer perceptron
- ☐ regressive induction
- ☐ dropout machine
- ☐ linear regression

Your answer is correct.

The correct answer is: long short-term memory

Question 5

Correct

1.00 points out of 1.00

Which of the following statements is **not** true for multilayer perceptrons?

Select one:

- ☐ They can include hidden nodes that compute learned features.
- ☐ They may use a sigmoidal logistic activation function.
- ☐ When used for classification, they can distinguish classes that are not linearly separable.
- ☒ Their hidden nodes must all produce outputs of  $-1$  or  $1$ . ✓
- ☐ They can be used for regression.

Your answer is correct.

The correct answer is: Their hidden nodes must all produce outputs of  $-1$  or  $1$ .

Question 6

Correct

1.00 points out of 1.00

Dropout is used in deep neural networks for

Select one:

- ☐ preventing exploding gradients.
- ☐ argmax encoding.
- ☐ softmax encoding.
- ☐ preventing vanishing gradients.
- ☐ standardization.
- ☐ early stopping, to decrease training time.
- ☒ regularization. ✓

Your answer is correct.

The correct answer is: regularization.

Question 7

Correct

1.00 points out of 1.00

The configuration of a neural network, including the number of layers that it contains and the activation functions that it uses, are referred to as the network's

Select one:

- ☐ "framework."
- ☐ "convolution."
- ☐ "fit."
- ☐ "scaffolding."
- ☒ "architecture." ✓
- ☐ "recurrence."
- ☐ "profile."
- ☐ "silhouette."

Your answer is correct.

The correct answer is: "architecture."

Question 8

Correct

1.00 points out of 1.00

ReLU is

Select one:

- ☐ only used for symbolic regression.
- ☐ a recurrent neural network architecture.
- ☐ usually used for inferring missing data values.
- ☒ an activation function. ✓
- ☐ a regularization term.
- ☐ a standardization method.
- ☐ a type of neural network using recency loss units.
- ☐ an alternative to garbage collection.

Your answer is correct.

The correct answer is: an activation function.

Question 9

Correct

1.00 points out of 1.00

Which of the following is **not** an example of sequential data?

Select one:

- ☐ English poetry
- ☐ musical scores
- ☐ DNA sequences
- ☐ interest rates over time
- ☒ measurements and species names for flowers ✓

Your answer is correct.

The correct answer is: measurements and species names for flowers

Question **10**

Correct

1.00 points out of 1.00

The backpropagation algorithm

Select one:

- ☐ is guaranteed to find the global minimum of the cost function.
- ☐ adjusts the weights in a multi-layer perceptron until the cost function increases, after which it backtracks.
- ☐ can only be used to train a classifier if the training data is linearly separable.
- ☒ adjusts the weights in the network layer by layer, from the outputs to the inputs. ✓
- ☐ can only be used to train shallow neural networks, with three or fewer layers.
- ☐ will not terminate if any two training examples are identical.

Your answer is correct.

The correct answer is: adjusts the weights in the network layer by layer, from the outputs to the inputs.

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