In a recurrent neural network, which units always perform calculations with no interaction with the outside world?

- a. Output units
- b. None of the mentioned
- c. Hidden units ✖
- d. Input units

Your answer is incorrect.

The correct answer is:
None of the mentioned

The activation values of the hidden units in a neural network, with the sigmoid activation function applied at every layer, are always in the range (0, 1).

Select one:

- True ✔
- False

What does a neuron compute?

a. A neuron computes a function g that scales the input x linearly (Wx + b)

b. A neuron computes the mean of all features before applying the output to an activation function

c. A neuron computes a linear function (z = Wx + b) followed by an activation function ✔

d. A neuron computes an activation function followed by a linear function (z = Wx + b)

Which loss function(s) are most commonly used in training classifiers?

- [x] a. Hinge loss ✔
- [x] b. Cross-entropy loss ✔
- [ ] c. Mean-absolute error loss
- [ ] d. Mean-squared error loss

A two layer (one input layer, one output layer; no hidden layer) neural network can represent the XOR function.

Select one:

- True
- False ✔

What is the minimum number of layers required in a feed-forward network for approximating an arbitrary nonlinear function?

a. 4

b. 3 ✔

c. 2

d. 1

What is/are the undisputed advantages of neural networks over other machine learning methods?

- [x] a. They can learn intermediate feature representations of the input ✗
- [ ] b. They are more suited for real time operation
- [x] c. They extract feature representations optimized for the task ✓
- [x] d. They have the ability to learn by example ✗
- [ ] e. They are more fault tolerant

Your answer is partially correct.

You have selected too many options.
The correct answers are:
They extract feature representations optimized for the task,

They are more suited for real time operation

Suppose you have a multi-class classification problem with three classes, trained with a 3 layer network. Let $a^{(3)}_1=(h_\Theta(x))_1$ be the activation of the first output unit, and similarly $a^{(3)}_2=(h_\Theta(x))_2$ and $a^{(3)}_3=(h_\Theta(x))_3$. Then for any input x, it must be the case that $a^{(3)}_1+a^{(3)}_2+a^{(3)}_3=1$.

Select one:

- True ✖
- False

What is the linear activation potential?

a. The threshold value

b. The neuron's output

c. None of the mentioned

d. The sum of inputs

e. The activation function

Your answer is incorrect.

The correct answer is:
None of the mentioned

Any logical function over binary-valued (0 or 1) inputs can be (approximately) represented using some neural network.

Select one:

- True ✔
- False