Congratulations! You passed!

Next Item

1 / 1 points

1. The best nonlinearity functions to use in a Multilayer perceptron are step functions as they allow to reconstruct the decision boundary with better precision.

- [ ] Yes
- [x] No

Correct
Step function gradient with the respect to its input is zero almost everywhere - thus the resulting network can't be trained via backpropagation.

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1 / 1 points

2. A dense layer applies a linear transformation to its input

- [x] Yes

Correct
That's the definition of a dense layer.

- [ ] No

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1 / 1 points

3. For an MLP to work, the nonlinearity function must have a finite upper bound

- [ ] Yes
- [x] No

Correct
Correct. For example, the widely used ReLu has no upper bound.

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1 / 1 points

4. How many dimensions will a derivative of a 1-D vector by a 2-D matrix have?

3

Correct Response
The rule of thumb is that the final derivative will consist of derivatives of each component of the output by each component of input. So, for each element of the output vector there will be a 2-D matrix of derivatives, 3 dimensions in total.