← **Introduction to deep learning**
Quiz, 10 questions

✖ **Try again once you are ready.**

Required to pass: 80% or higher

You can retake this quiz up to 3 times every 8 hours.

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1.

What does the analogy "AI is the new electricity" refer to?

○ Similar to electricity starting about 100 years ago, AI is transforming multiple industries.

▲

Correct
Yes. AI is transforming many fields from the car industry to agriculture to supply-chain…

○ Through the "smart grid", AI is delivering a new wave of electricity.

○ AI runs on computers and is thus powered by electricity, but it is letting computers do things not possible before.

○ AI is powering personal devices in our homes and offices, similar to electricity.

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2.
Which of these are reasons for Deep Learning recently taking off? (Check the three options that apply.)

☐   We have access to a lot more data.

Correct
Yes! The digitalization of our society has played a huge role in this.

☐   We have access to a lot more computational power.

Correct
Yes! The development of hardware, perhaps especially GPU computing, has significantly improved deep learning algorithms' performance.

☐   Deep learning has resulted in significant improvements in important applications such as online advertising, speech recognition, and image recognition.

This should be selected
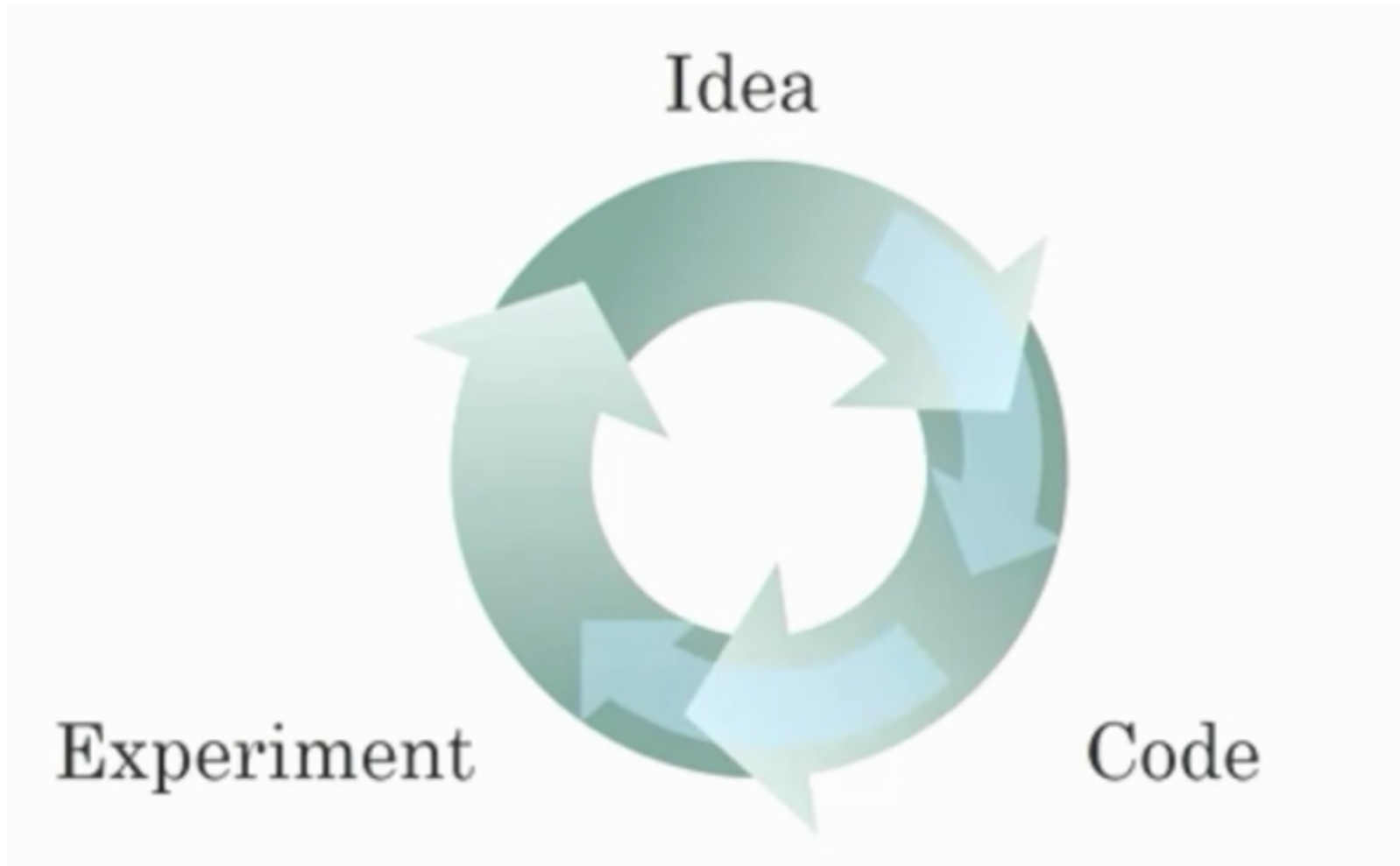
☐   Neural Networks are a brand new field.

Un-selected is correct

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3.

Recall this diagram of iterating over different ML ideas. Which of the statements below are true? (Check all that apply.)

☐   Being able to try out ideas quickly allows deep learning engineers to iterate more quickly.

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☐ Faster computation can help speed up how long a team takes to iterate to a good idea.

Correct
Yes, as discussed in Lecture 4.

☐ It is faster to train on a big dataset than a small dataset.

This should not be selected
No. This is not true. Training on a big dataset is usually slower than training on a small dataset.

☐ Recent progress in deep learning algorithms has allowed us to train good models faster (even without changing the CPU/GPU hardware).

Correct
Yes. For example, we discussed how switching from sigmoid to ReLU activation functions allows faster training.

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4.

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When an experienced deep learning engineer works on a new problem, they can usually use insight from previous problems to train a good model on the first try, without needing to iterate multiple times through different models.
True/False?

○ True

✓ False

Correct
Yes. Finding the characteristics of a model is key to have good performance. Although experience can help, it requires multiple iterations to build a good model.

✓   1 / 1
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5.

Which one of these plots represents a ReLU activation function?

○   Figure 1:

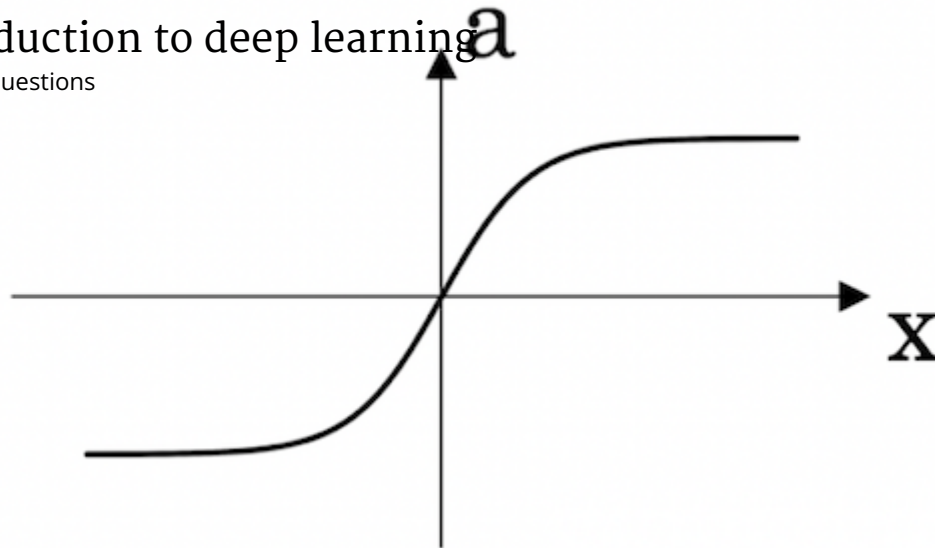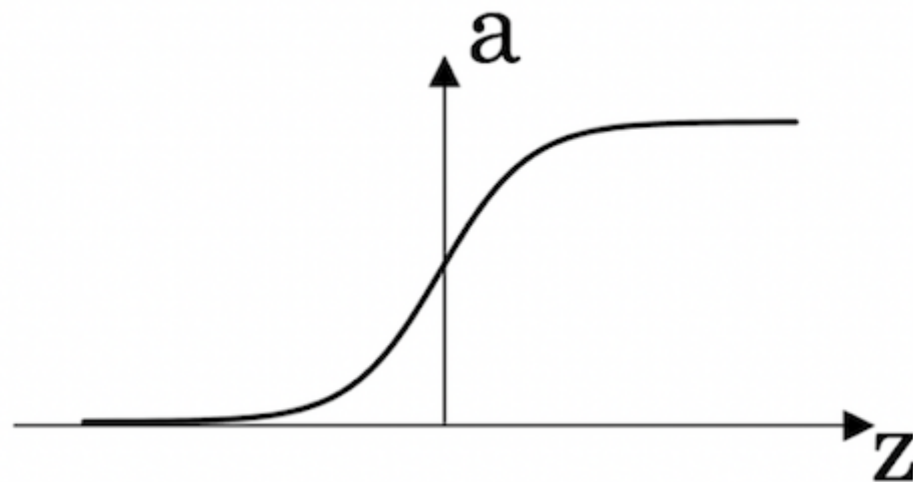# Introduction to deep learning
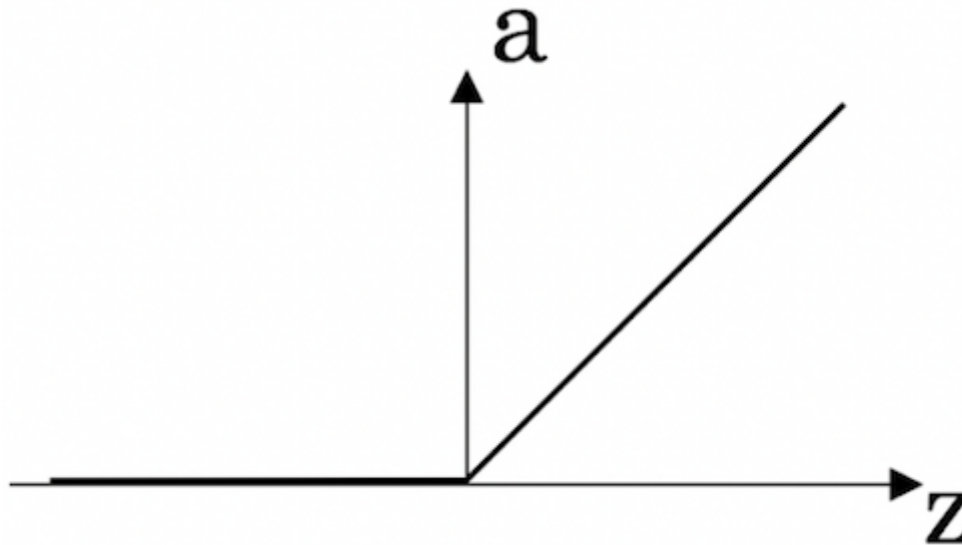
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○ Figure 2:

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⬤   Figure 3:

Correct

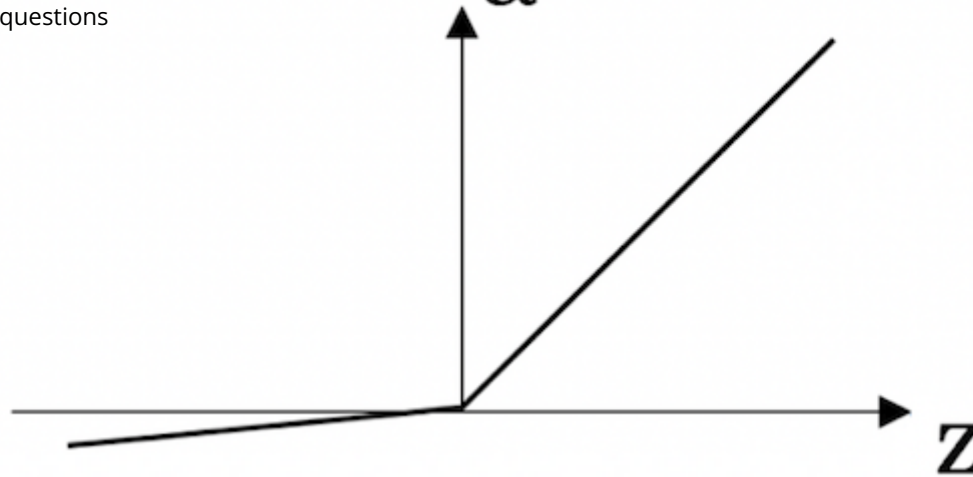Correct! This is the ReLU activation function, the most used in neural networks.

◯   Figure 4:

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✔ **1 / 1 point**

6.

Images for cat recognition is an example of "structured" data, because it is represented as a structured array in a computer. True/False?

○ True

○ False

Correct
Yes. Images for cat recognition is an example of "unstructured" data.

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7.

A demographic dataset with statistics on different cities' population, GDP per capita, economic growth is an example of "unstructured" data because it contains data coming from different sources. True/False?

○ True

○ False

Correct

A demographic dataset with statistics on different cities' population, GDP per capita, economic growth is an example of "structured" data by opposition to image, audio or text datasets.

✘

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8.

Why is an RNN (Recurrent Neural Network) used for machine translation, say translating English to French? (Check all that apply.)

☐ It can be trained as a supervised learning problem.

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Correct
Yes. We can train it on many pairs of sentences x (English) and y (French).

☐ It is strictly more powerful than a Convolutional Neural Network (CNN).

Un-selected is correct

☐ It is applicable when the input/output is a sequence (e.g., a sequence of words).

Correct
Yes. An RNN can map from a sequence of english words to a sequence of french words.

☐ RNNs represent the recurrent process of Idea->Code->Experiment->Idea->....

This should not be selected
No. RNNs are a model type. The iterative process of developing DL systems is a completely separate concept.
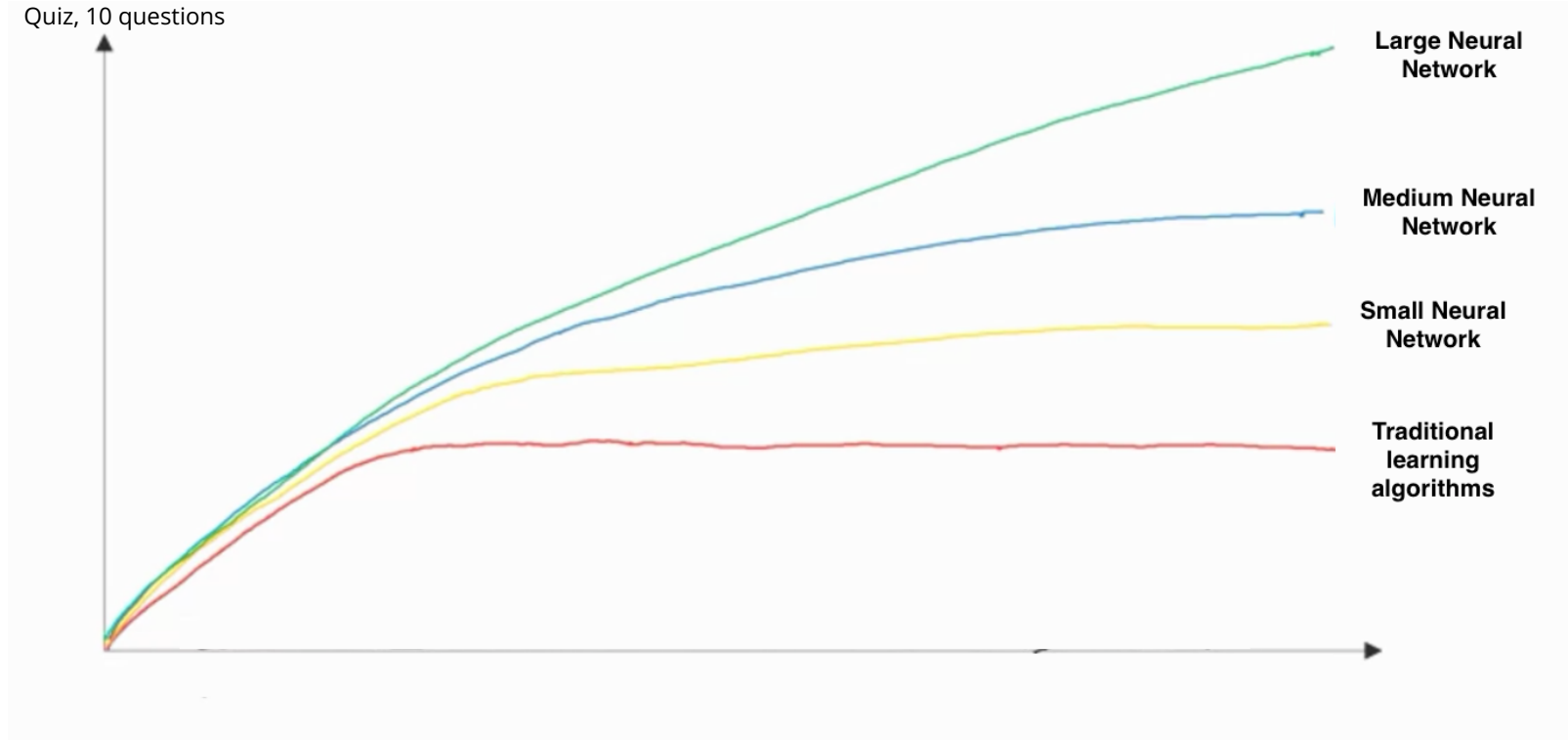

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9.

In this diagram which we hand-drew in lecture, what do the horizontal axis (x-axis) and vertical axis (y-axis) represent?

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○
- x-axis is the amount of data
- y-axis is the size of the model you train.

○
- x-axis is the performance of the algorithm
- y-axis (vertical axis) is the amount of data.

○

- x-axis is the amount of data

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- y-axis (vertical axis) is the performance of the algorithm.

▲

Correct

○
- x-axis is the input to the algorithm

- y-axis is outputs.

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10.

Assuming the trends described in the previous question's figure are accurate (and hoping you got the axis labels right), which of the following are true? (Check all that apply.)

☐ Decreasing the size of a neural network generally does not hurt an algorithm's performance, and it may help significantly.

▲

This should not be selected

No. According to the trends in the figure above, big networks usually perform better than small networks.

☐ Increasing the size of a neural network generally does not hurt an algorithm's performance, and it may help significantly.

▲

This should be selected

☐ Increasing the training set size generally does not hurt an algorithm's performance, and it may help significantly.

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This should be selected

☐ Decreasing the training set size generally does not hurt an algorithm's performance, and it may help significantly.

Un-selected is correct

👍 👎 🏳