

## Introduction to deep learning

評分測驗 • 30 min

截止時間 3月21日 23:59 PDT

# Introduction to deep learning

總分：10

1.

第 1 個問題

What does the analogy “AI is the new electricity” refer to?

1 分

- ☐ Through the “smart grid”, AI is delivering a new wave of electricity.
- ☐ AI is powering personal devices in our homes and offices, similar to electricity.
- ☐ Similar to electricity starting about 100 years ago, AI is transforming multiple industries.
- ☐ AI runs on computers and is thus powered by electricity, but it is letting computers do things not possible before.

2.

第 2 個問題

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

1 分

- ☐ Deep learning has resulted in significant improvements in important applications such as online advertising, speech recognition, and image recognition.
- ☐ Neural Networks are a brand new field.
- ☐ We have access to a lot more computational power.
- ☐ We have access to a lot more data.

3.

第 3 個問題

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





1 分

- ☐ Being able to try out ideas quickly allows deep learning engineers to iterate more quickly.
- ☐ Faster computation can help speed up how long a team takes to iterate to a good idea.
- ☐ It is faster to train on a big dataset than a small dataset.
- ☐ Recent progress in deep learning algorithms has allowed us to train good models faster (even without changing the CPU/GPU hardware).

4.

第 4 個問題

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?

1 分

- ☐ True
- ☐ False

5.

第 5 個問題

Which one of these plots represents a ReLU activation function?

1 分

Figure 1:

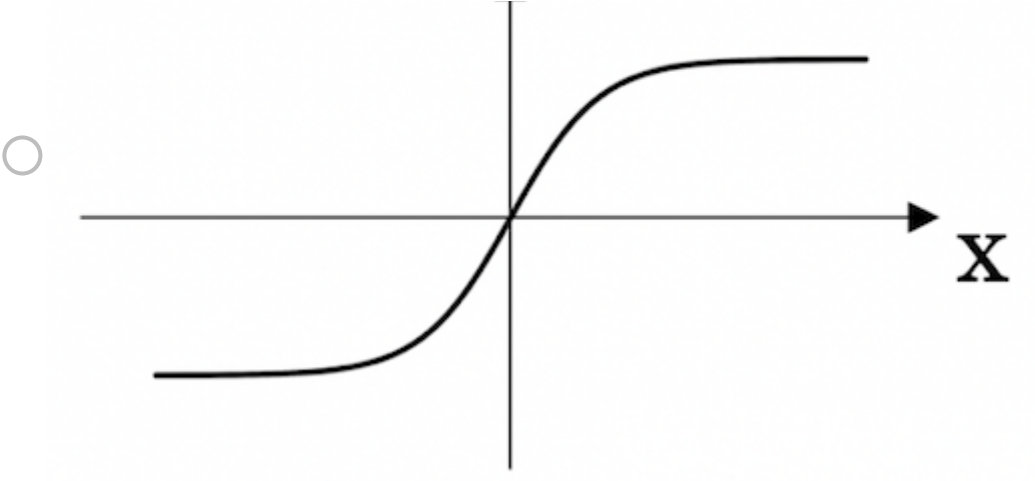


Figure 2:

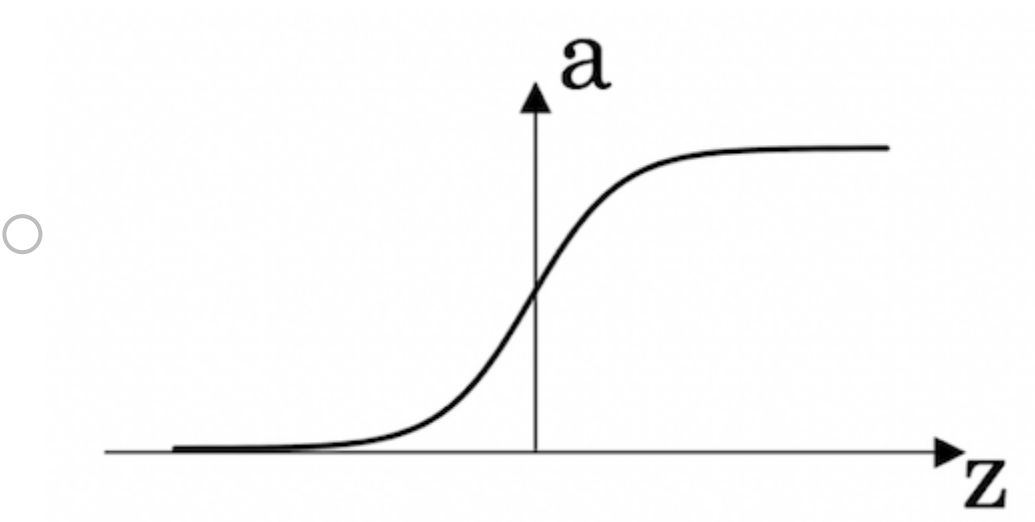
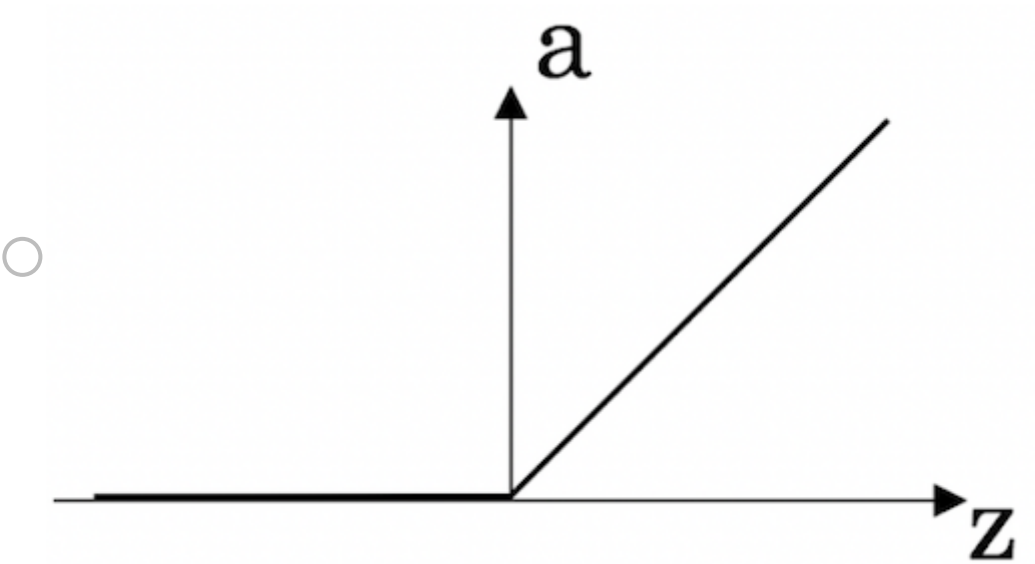
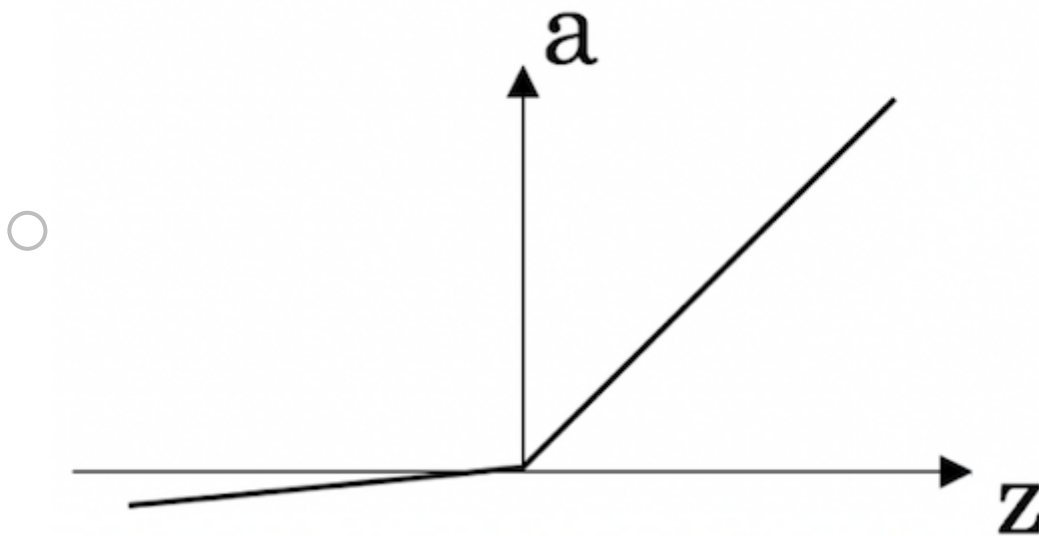


Figure 3:



**Figure 4:**

6.

第 6 個問題

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

1 分

☐ True☐ False

7.

第 7 個問題

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?

1 分

☐ True☐ False

8.

第 8 個問題

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

1 分

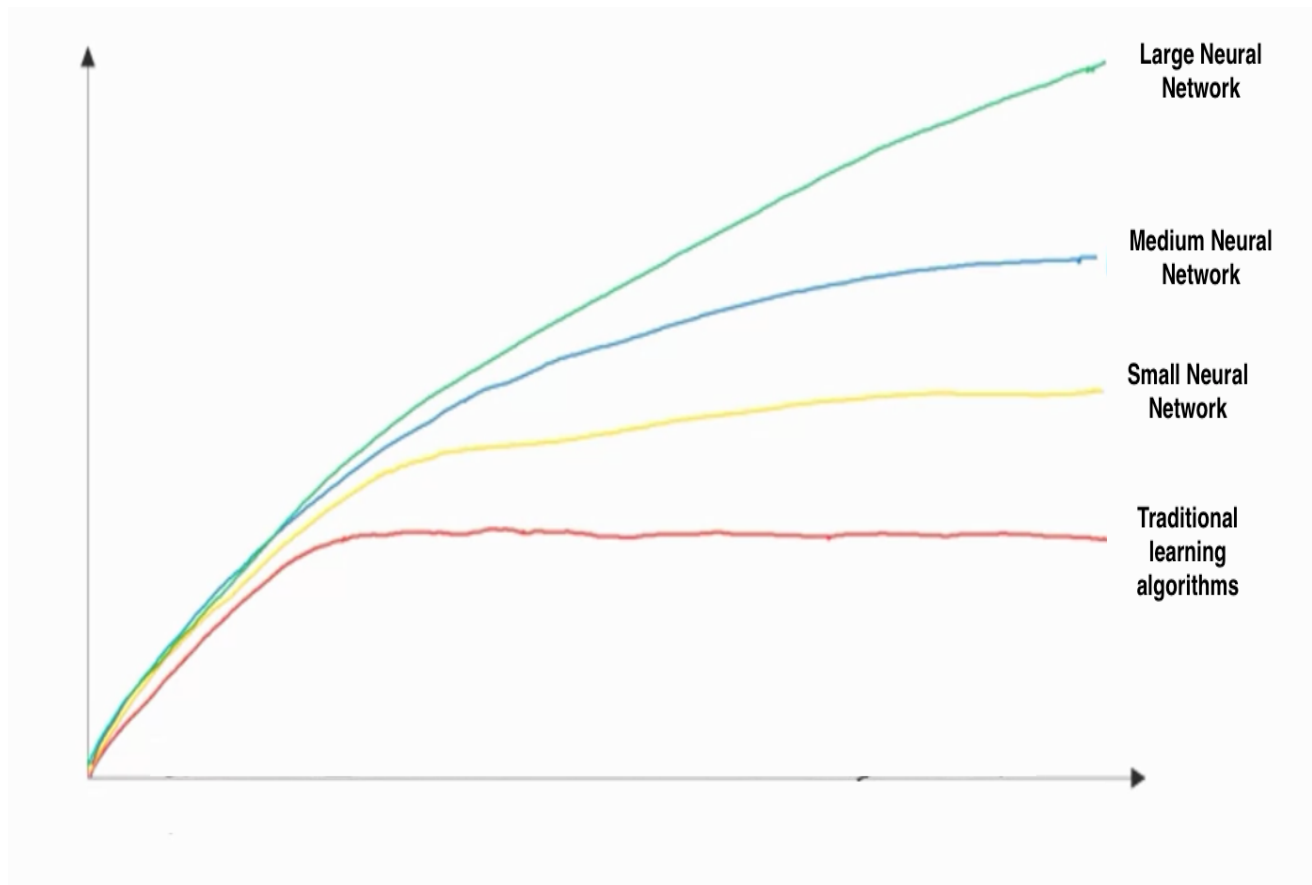
☐ It can be trained as a supervised learning problem.

- ☐ It is strictly more powerful than a Convolutional Neural Network (CNN).
- ☐ It is applicable when the input/output is a sequence (e.g., a sequence of words).
- ☐ RNNs represent the recurrent process of Idea->Code->Experiment->Idea->....

9.

第 9 個問題

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



1 分

- ☐ x-axis is the performance of the algorithm  
y-axis (vertical axis) is the amount of data.
- ☐ x-axis is the amount of data  
y-axis is the size of the model you train.
- ☐ x-axis is the input to the algorithm  
y-axis is outputs.
- ☐ x-axis is the amount of data  
y-axis (vertical axis) is the performance of the algorithm.

10.

## 第 10 個問題

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.)

1 分

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

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

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☐ 我 jingkai bo 了解，如果將他人的作業當作我自己的作業提交，此作業的學分可能為零。屢次違反 Coursera 榮譽準則可能會導致無法參加該課程或我的 Coursera 帳號會被停用。