

## Introduction to Deep Learning

Latest Submission Grade 86%

1. Which of the following are some aspects in which AI has transformed business?

1 / 1 point

- ☐ AI has not been able to transform businesses.
- ☒ Web searching and advertisement.
- ☐ Creating an AI-powered society.
- ☐ Eliminating the need for health care services.

✔ Correct

Yes. AI has helped to make a fit between services or results and consumers or queries.

2. Which of the following play a major role to achieve a very high level of performance with Deep Learning algorithms?

0.6 / 1 point

- ☒ Large amounts of data.

✔ Correct

Yes. Some of the most successful Deep Learning algorithms make use of very large datasets for training.

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

✔ Correct

These were all examples discussed in lecture 3.

- ☐ Large models.

- ☐ Smaller models.

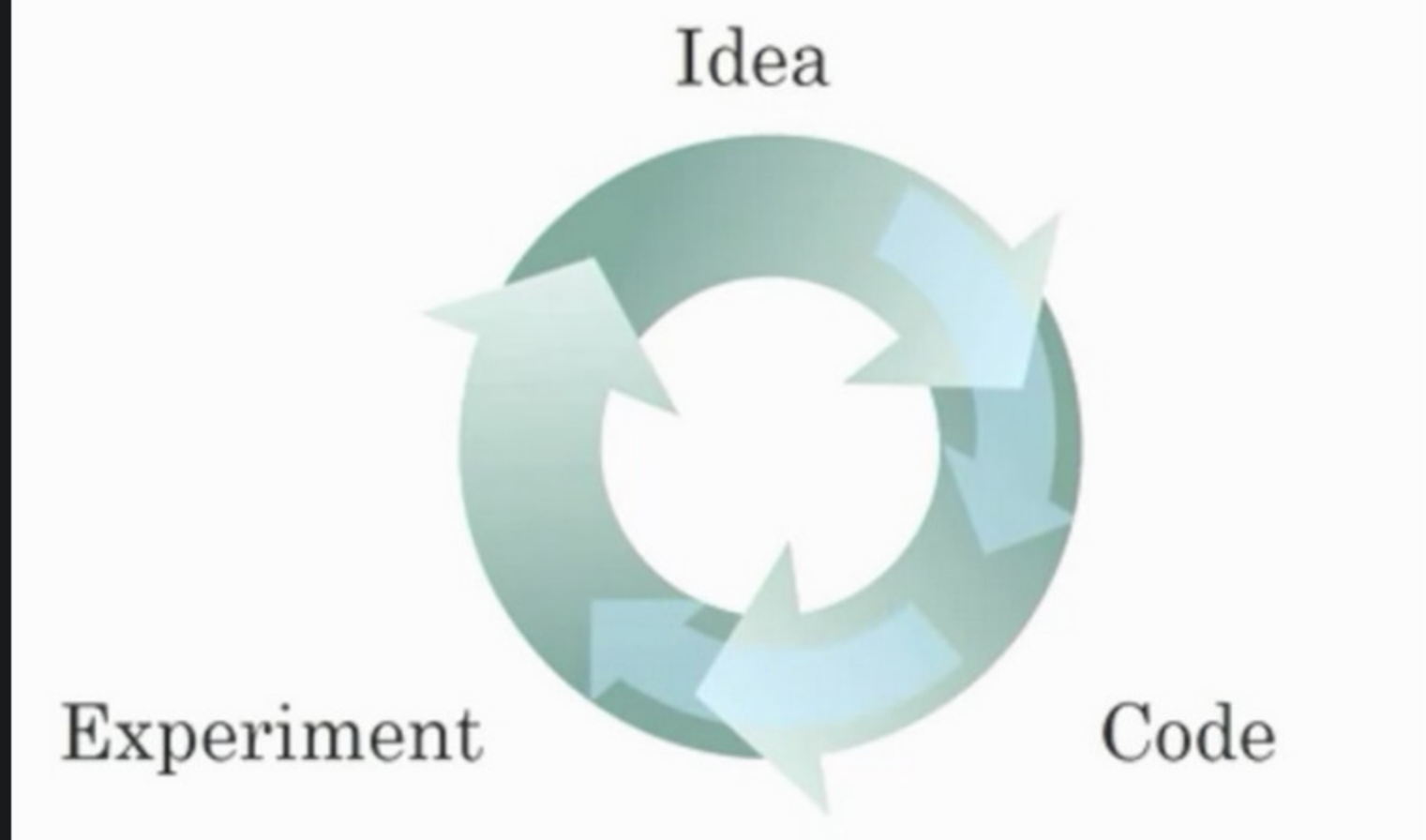
- ☒ Better designed features to use.

✘ This should not be selected

No. One main difference between "classical" machine learning algorithms and deep learning algorithms is that Deep Learning models "figure out" the best features using the hidden layers.

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

0.75 / 1 point



- ☒ 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.

- ☒ 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.

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

You didn't select all the correct answers

4. When building a neural network to predict housing price from features like size, the number of bedrooms, zip code, and wealth, it is necessary to come up with other features in between input and output like family size and school quality. True/False?

1 / 1 point

- ☐ True
- ☒ False

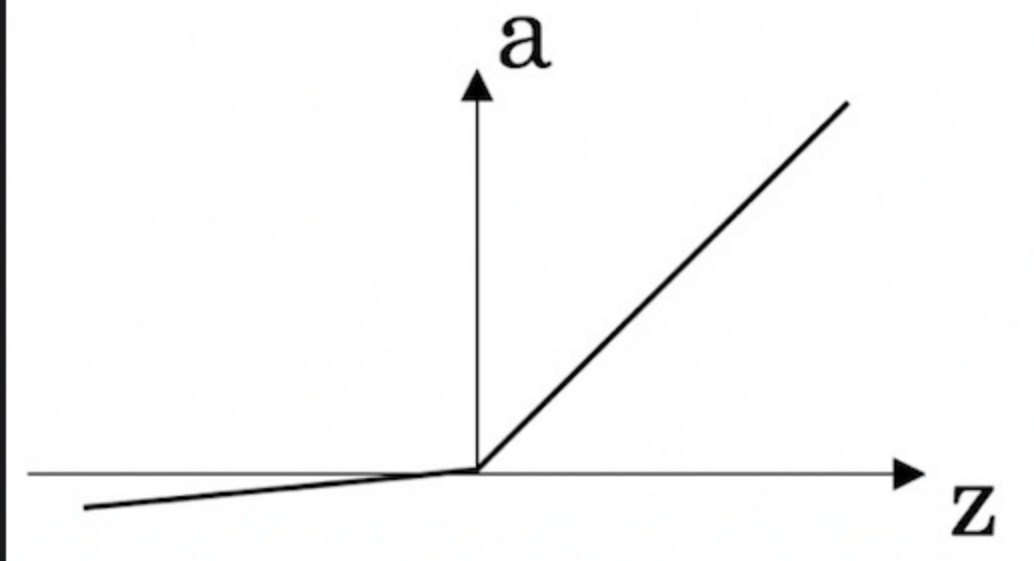
✔ Correct

A neural network figures out by itself the "features" in between using the samples used to train it.

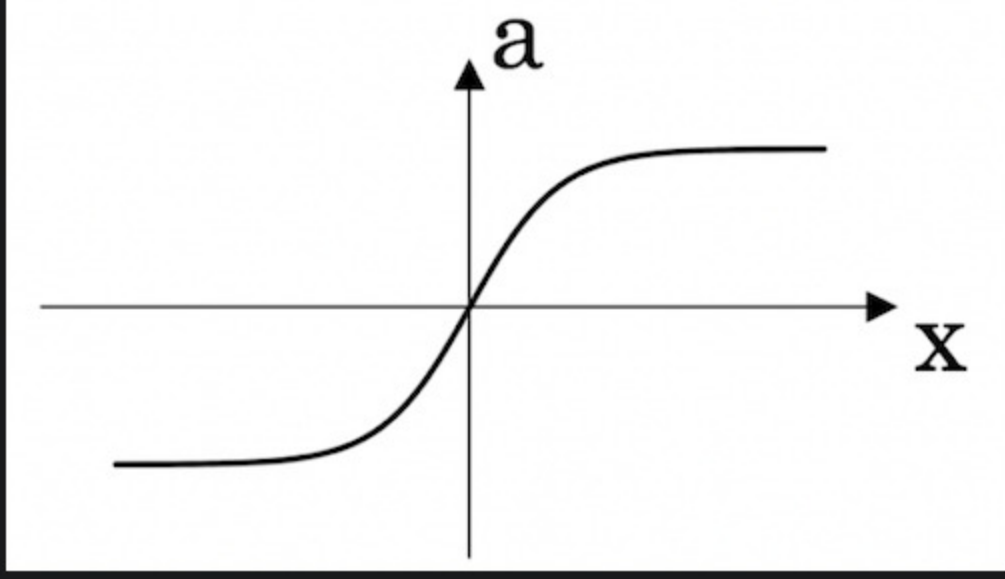
5. Which one of these plots represents a ReLU activation function?

1 / 1 point

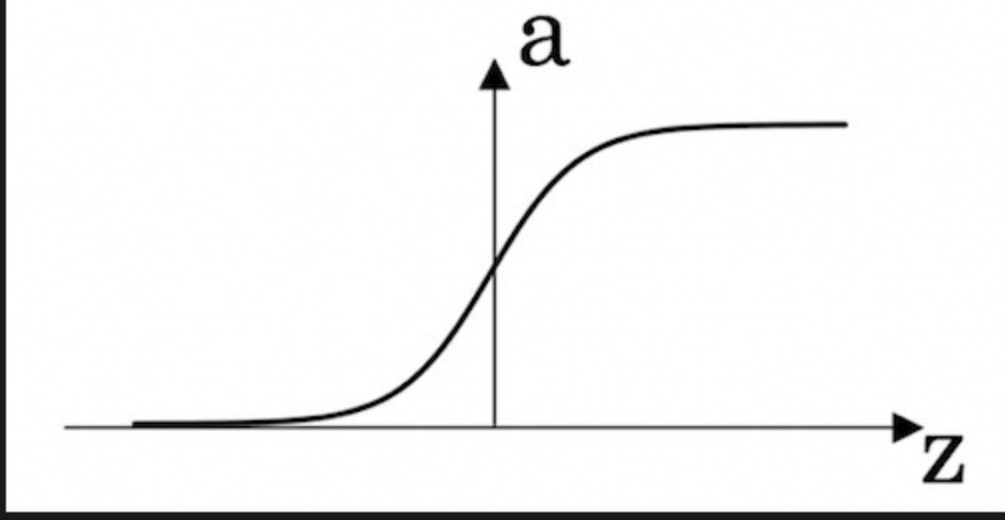
- ☐ Figure 4:



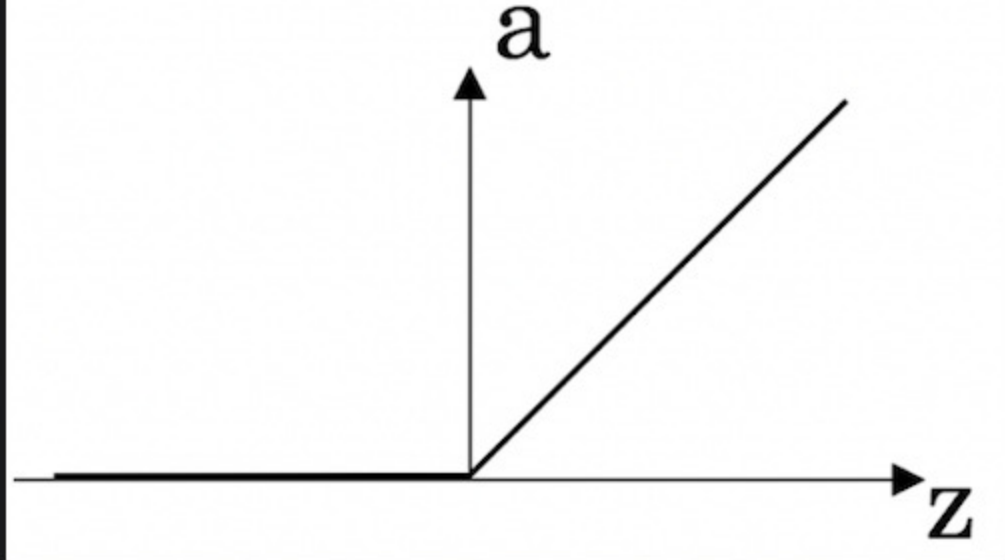
- ☐ Figure 1:



- ☐ Figure 2:



- ☒ Figure 3:



✔ Correct

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

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

1 / 1 point

- ☒ False
- ☐ True

✔ Correct

Yes. Images for cat recognition are examples of "unstructured" data.

7. Which of the following are examples of structured data? Choose all that apply.

0.75 / 1 point

- ☒ A dataset with short poems.

✘ This should not be selected

No, text files are examples of "unstructured" data.

- ☒ A dataset of weight, height, age, the sugar level in the blood, and arterial pressure.

✔ Correct

Yes, this data can be presented in a table. This is an example of "structured" data.

- ☒ A dataset with zip code, income, and name of a person.

✔ Correct

Yes, this data can be presented in a table. This is an example of "structured" data.

- ☐ A set of audio recordings of a person saying a single word.

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

0.5 / 1 point

- ☒ 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.

- ☐ It can be trained as a supervised learning problem.

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

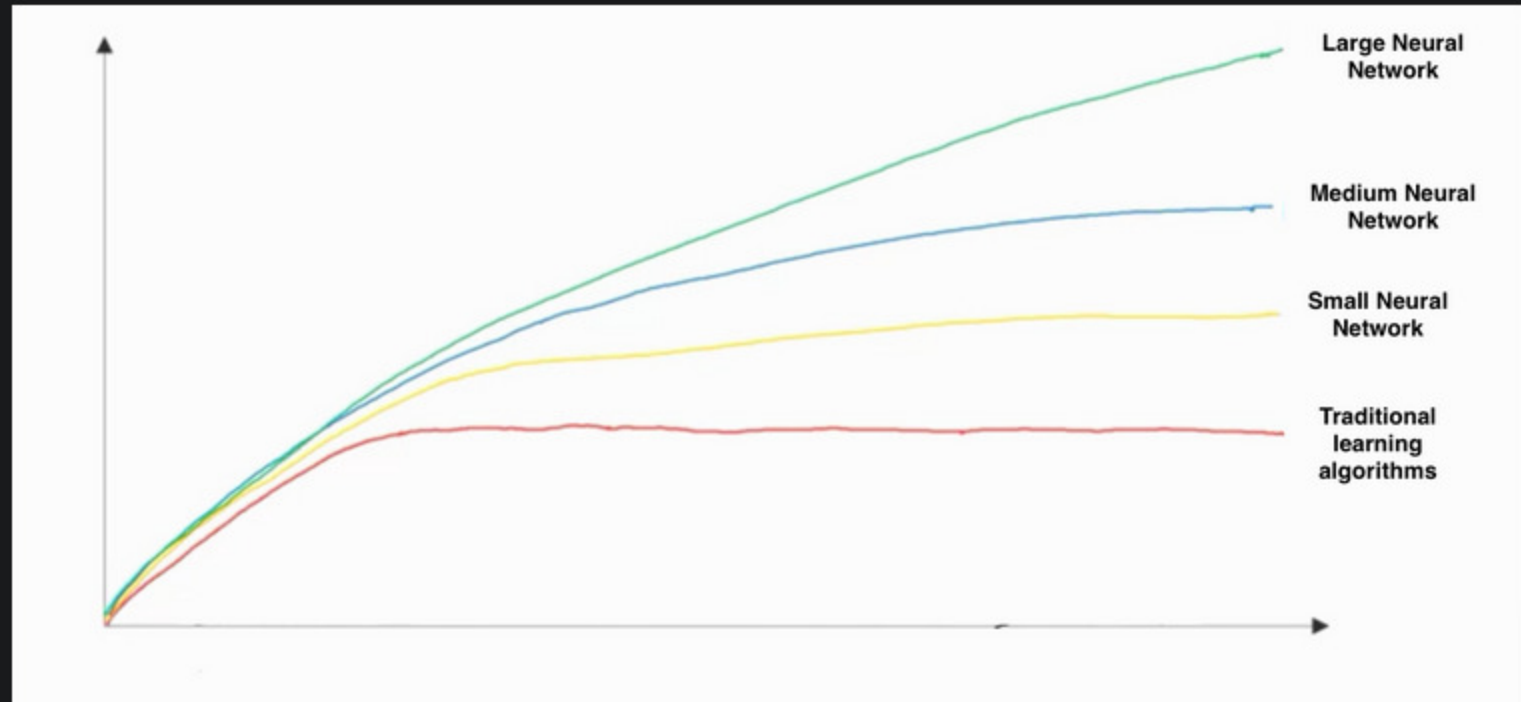
- ☒ RNNs represent the recurrent process of Idea->Code->Experiment->Idea->....

✘ This should not be selected

No. RNNs are a model type. The iterative process of developing DL systems is a completely separate concept.

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

1 / 1 point



- ☐ • x-axis is the input to the algorithm
- y-axis is outputs.

- ☐ • x-axis is the amount of data
- x-axis is the size of the model you train.

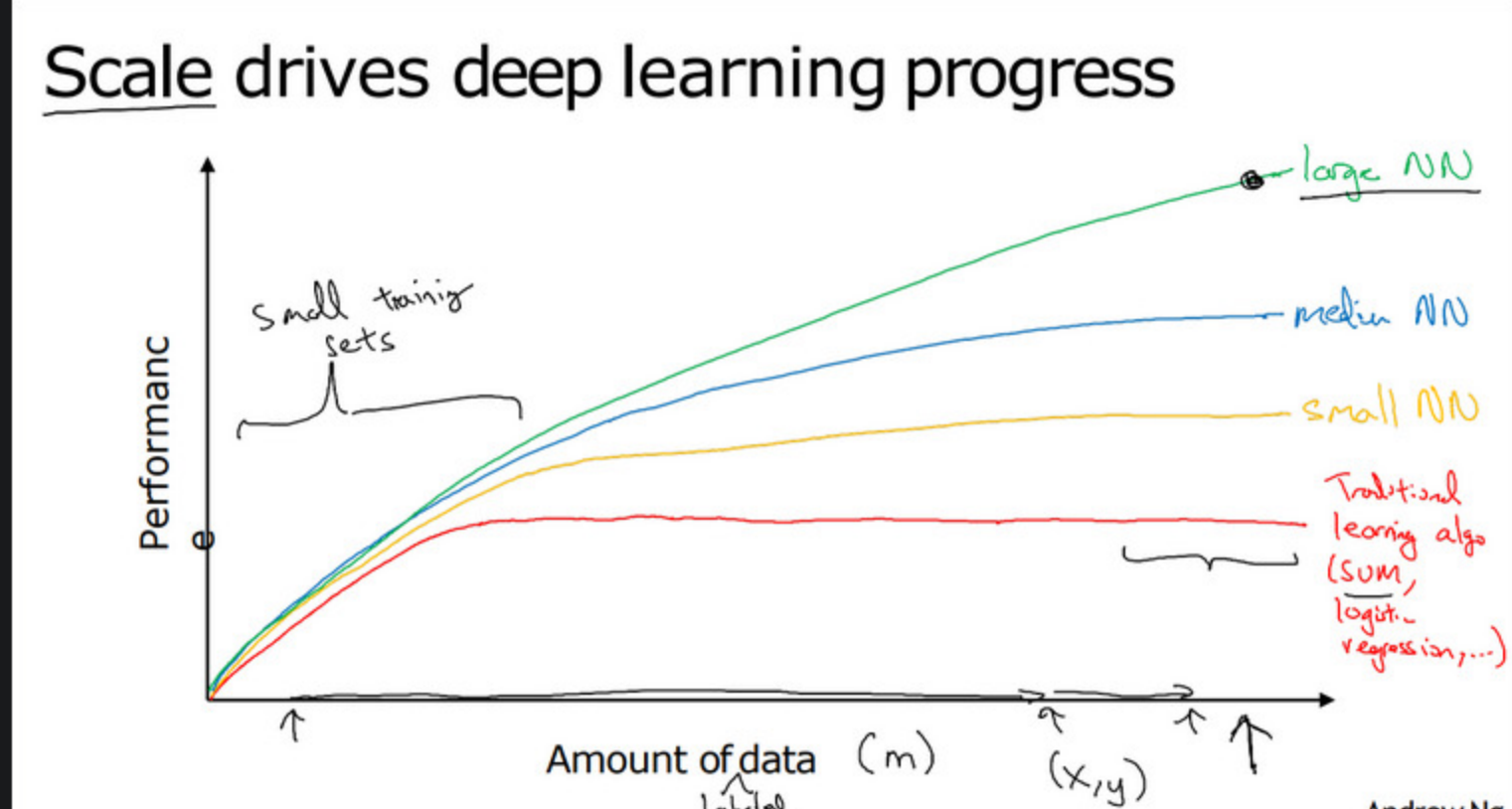
- ☒ • x-axis is the amount of data
- y-axis (vertical axis) is the performance of the algorithm.

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

✔ Correct

10. Assuming the trends described in the figure are accurate. Which of the following statements are true? Choose all that apply.

1 / 1 point



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

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

✔ Correct

Yes. According to the trends in the figure above, big networks usually perform better than small networks.

- ☒ Increasing the training set size of a traditional learning algorithm stops helping to improve the performance after a certain size.

✔ Correct

Yes. After a certain size, traditional learning algorithms don't improve their performance.

- ☐ Increasing the training set size of a traditional learning algorithm always improves its performance.