Your grade: 92.50%

Your latest: **92.50%** • Your highest: **92.50%** • To pass you need at least 80%. We keep your highest score.

Next item

1. Which of the following best describes the role of AI in the expression "an AI-powered society"? 1 / 1 point

- ○ AI controls the power grids for energy distribution, so all the power needed for industry and in daily life comes from AI.
- ○ AI helps to create a more efficient way of producing energy to power industries and personal devices.
- ◉ AI is an essential ingredient in realizing tasks, in industry and in personal life.

Correct
In an AI-powered society AI plays a fundamental role to complete most tasks, in industry and personal life.

2. Which of these are reasons for Deep Learning recently taking off? (Check the three options that apply.) 1 / 1 point

- ☑ 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.

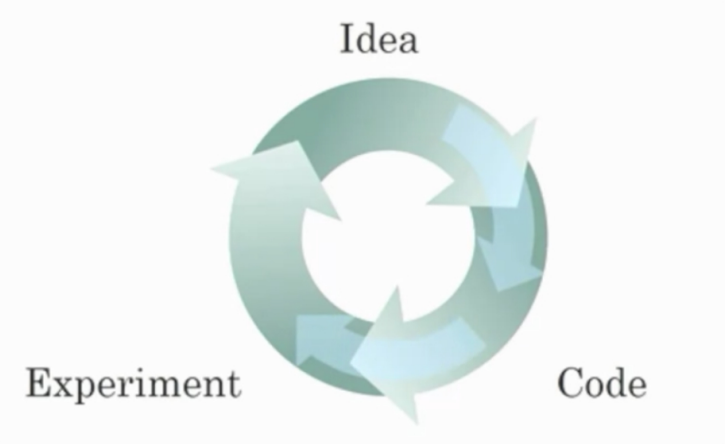
- ☐ Neural Networks are a brand new field.
- ☑ Deep learning has resulted in significant improvements in important applications such as online advertising, speech recognition, and image recognition.

Correct
These were all examples discussed in lecture 3.

- ☑ We have access to a lot more data.

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

3. Recall this diagram of iterating over different ML ideas. Which of the statements below are true? (Check all that apply.) 1 / 1 point



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

Correct
Yes, as discussed in Lecture 4.

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

Correct
Yes, as discussed in Lecture 4.

- ☑ 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.

- [ ] It is faster to train on a big dataset than a small dataset.

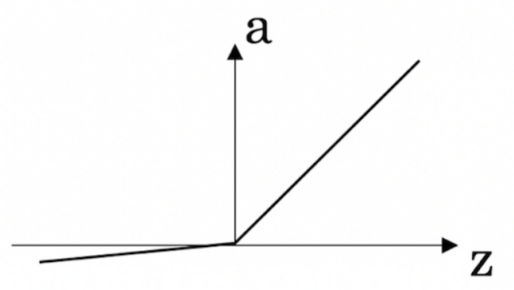
4. Neural networks are good at figuring out functions relating an input x to an output y given enough examples. True/False? 1 / 1 point

- ○ False
- ◉ True

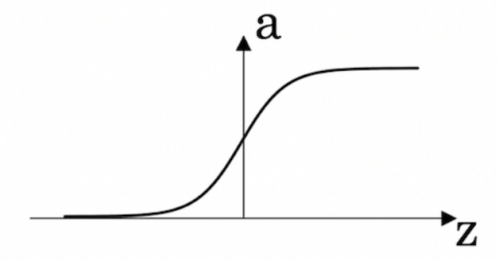
Correct
Exactly, with neural networks, we don't need to "design" features by ourselves. The neural network figures out the necessary relations given enough data.

5. Which one of these plots represents a ReLU activation function? 1 / 1 point

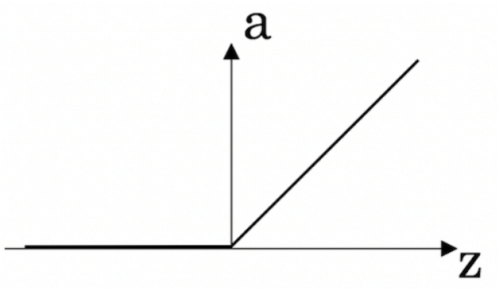
- ○ Figure 4:



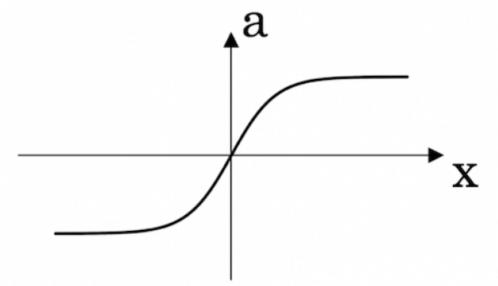
- ○ Figure 2:



- ◉ Figure 3:



- ○ Figure 1:



Correct

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

6. Which of the following are examples of unstructured data? Choose all that apply. 0.75 / 1 point

- [ ] Information about elephants' weight, height, age, and the number of offspring.
- [x] Sound files for speech recognition.

Correct
Yes, audio is an example of "unstructured" data.

- [ ] Text describing size and number of pages of books.
- [x] Images for bird recognition.

Correct
Yes, images are an example of "unstructured" data.

You didn't select all the correct answers

7. Which of the following are examples of structured data? Choose all that apply. 1 / 1 point

- [x] 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.

- [x] 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.

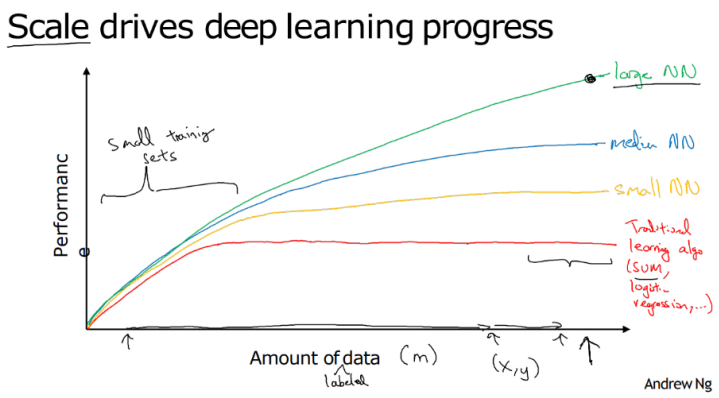
- [ ] A dataset with short poems.
- [ ] A set of audio recordings of a person saying a single word.

8. RNNs (Recurrent Neural Networks) are good for data with a temporal component. True/False? 1 / 1 point

- ( ) False
- (•) True

Correct
Yes, RNN are designed to work with sequences; the elements of a sequence can be sorted by a temporal component.

1 / 1 point



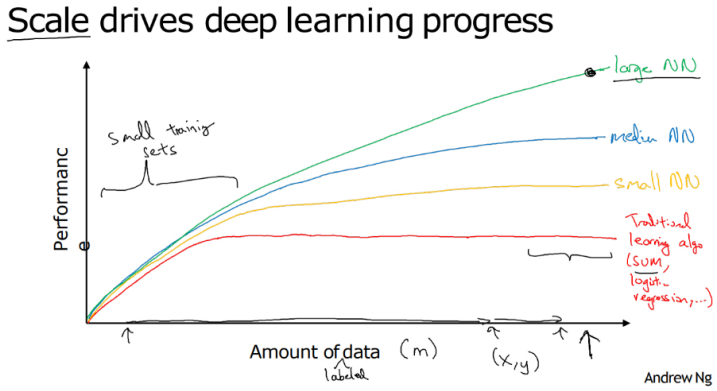
9. From the given diagram, we can deduce that Large NN models are always better than traditional learning algorithms. True/False?

- (•) False
- ( ) True

Correct
Yes, when the amount of data is not large the performance of traditional learning algorithms is shown to be the same as NN.

10. Assuming the trends described in the figure are accurate. Which of the following statements are true? Choose 0.5 / 1 point

all that apply.



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

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

This should not be selected
No. After a certain size, traditional learning algorithms don't improve their performance.

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