

## ✔ Congratulations! You passed!

Grade  
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To pass 80% or  
higher

Go to next item

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

1 / 1 point

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

Expand

✔ Correct

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

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

1 / 1 point

- ☐ Neural Networks are a brand new field.
- ☒ 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.

✔ Correct

These were all examples discussed in lecture 3.

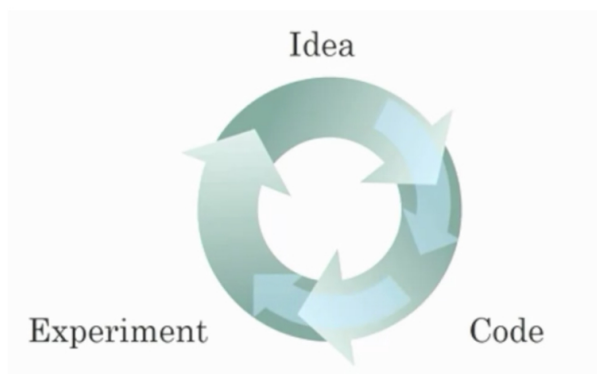
Expand

✔ Correct

Great, you got all the right answers.

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.

- ☒ 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.

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

✔ Correct

Yes, as discussed in Lecture 4.

Expand

Correct

Great, you got all the right answers.

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

Expand

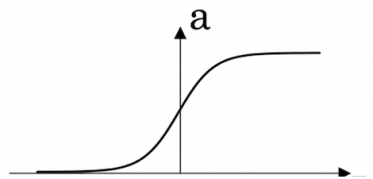
Correct

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 2:



Expand

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

- ☐ True  
☒ False

Expand

Correct

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

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

1 / 1 point

- ☐ True  
☒ False

Expand

Correct

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

8. Why can an RNN (Recurrent Neural Network) be used to create English captions to French movies? Choose all that apply.

1 / 1 point

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

Correct

Yes, the data can be used as  $x$  (movie audio) to  $y$  (caption text).

- ☐ RNNs are much more powerful than a Convolutional neural Network (CNN).

☒ The RNN is applicable since the input and output of the problem are sequences.

✓ **Correct**

Yes, an RNN can map from a sequence of sounds (or audio files) to a sequence of words (the caption).

☐ The RNN requires a small number of examples.

✓ **Expand**

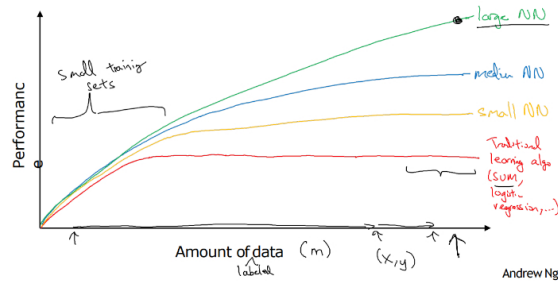
✓ **Correct**

Great, you got all the right answers.

9.

1 / 1 point

## Scale drives deep learning progress



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

- ☐ True
- ☒ False

✓ **Expand**

✓ **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 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 / 1 point

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

✓ **Correct**

Yes. Bringing more data to a model is almost always beneficial.

☒ 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.

☐ Decreasing 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.

✓ **Expand**

✓ **Correct**

Great, you got all the right answers.