Your grade: 100%

Your latest: **100%** • Your highest: **100%** • 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 helps to create a more efficient way of producing energy to power industries and personal devices.
- ○ AI controls the power grids for energy distribution, so all the power needed for industry and in daily life comes from AI.
- ◉ 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

- ☐ 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.

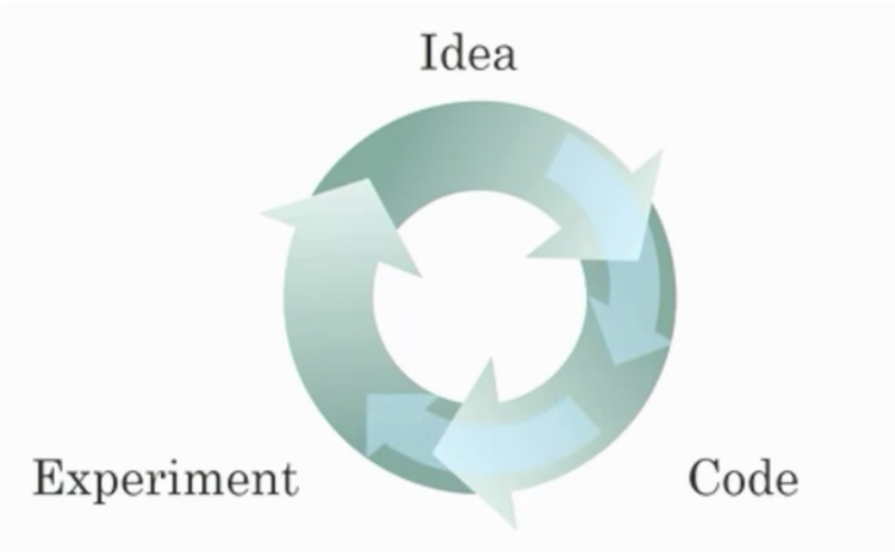
- ☑ We have access to a lot more data.

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

- ☑ 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.

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



- ☑ 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.

Correct
Yes, as discussed in Lecture 4.

- [x] 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.

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**

- (•) False
- ( ) True

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

5. ReLU stands for which of the following? **1 / 1 point**

- ( ) Representation Linear Unit
- ( ) Rectified Last Unit
- (•) Rectified Linear Unit
- ( ) Recognition Linear Unit

Correct
Correct, ReLU stands for Rectified Linear Unit.

6. Features of animals, such as weight, height, and color, are used for classification between cats, dogs, or others. This is an example of "structured" data, because they are represented as arrays in a computer. True/False? **1 / 1 point**

- ( ) False

  No. The data can be represented by columns of data. This is an example of structured data, unlike images of the animal.

- (•) True

  Yes. The data can be represented by columns of data. This is an example of structured data, unlike images of the animal.

Correct

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

- [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.
- [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.

8. Why can an RNN (Recurrent Neural Network) be used to create English captions to French movies? Choose all that apply. **1 / 1 point**

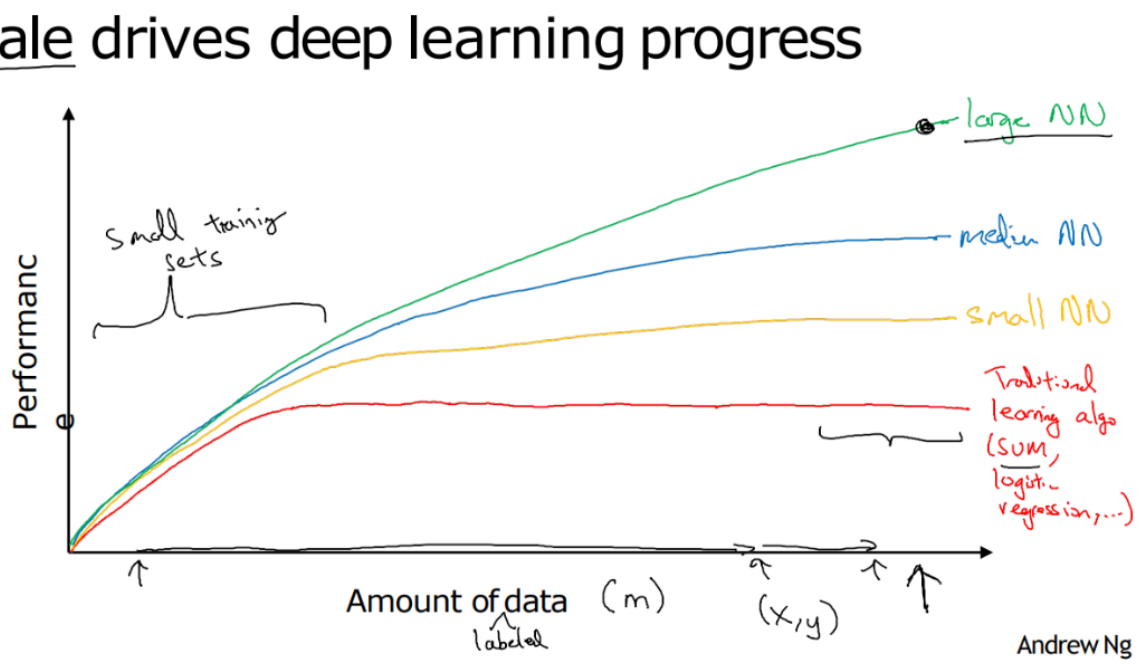
- [ ] The RNN requires a small number of examples.
- [ ] RNNs are much more powerful than a Convolutional neural Network (CNN).
- [x] The RNN is applicable since the input and output of the problem are sequences.

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

- [x] It can be trained as a supervised learning problem.

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

1 / 1 point



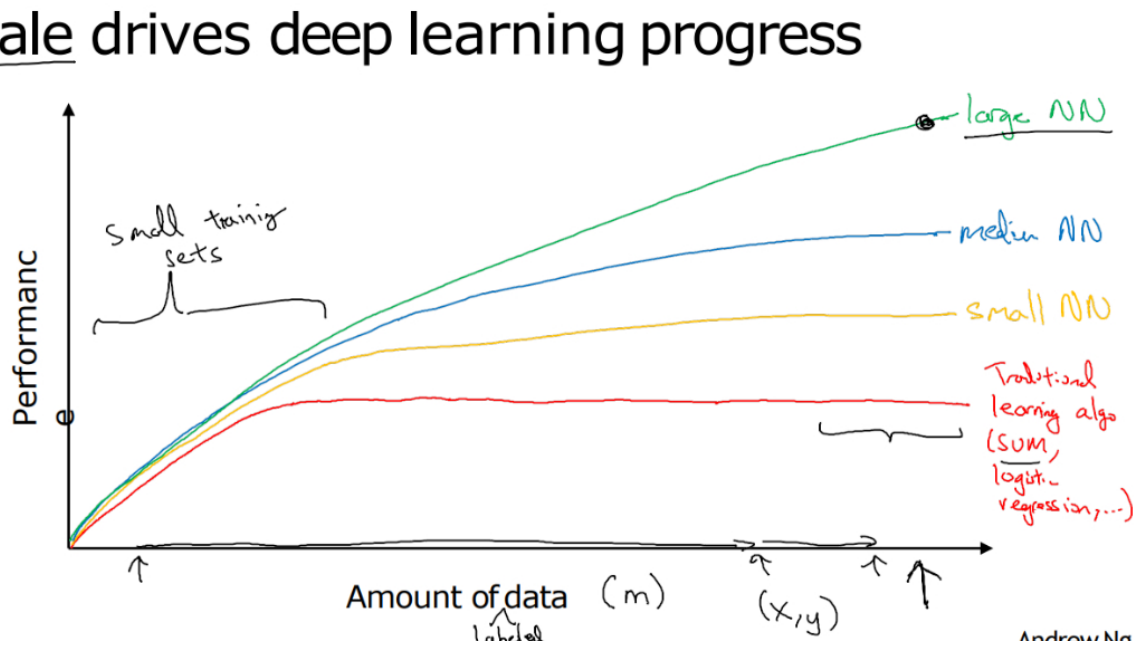
9. Suppose the information given in the diagram is accurate. We can deduce that when using large training sets, for a model to keep improving as the amount of data for training grows, the size of the neural network must grow. True/False?

- (•) True
- ( ) False

Correct
Yes, the graph shows that after a certain amount of data is fed to a NN it stops increasing its performance. To increase the performance it is necessary to use a larger model.

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

1 / 1 point



- [x] 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.

- [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.

- [ ] Decreasing the training set size generally does not hurt an algorithm's performance, and it may help significantly.
- [ ] Increasing the training set size of a traditional learning algorithm always improves its performance.