

✔ Congratulations! You passed!

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

1 / 1 point

- ☐ 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.
- ☐ Through the “smart grid”, AI is delivering a new wave of electricity.
- ☐ AI runs on computers and is thus powered by electricity, but it is letting computers do things not possible before.

↗ Expand



Correct

Yes. AI is transforming many fields from the car industry to agriculture to supply-chain...

2. Which of the following are reasons that didn't allow Deep Learning to be developed during the '80s?

1 / 1 point

- ☐ People were afraid of a machine rebellion.
- ☒ Interesting applications such as image recognition require large amounts of data that were not available.



Correct

Yes. Many resources used today to train Deep Learning projects come from the fact that our society digitizes almost everything, creating a large dataset to train Deep Learning models.

- ☒ Limited computational power.



Correct

Yes. Deep Learning methods need a lot of computational power, and only recently the use of GPUs has accelerated the experimentation with Deep Learning.

- ☐ The theoretical tools didn't exist during the 80's.

↗ 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





☒ Better algorithms can speed up the iterative process by reducing the necessary computation time.

✓ **Correct**

Yes. Recall how the introduction of the ReLU activation function helped reduce the time needed to train a model.

☐ Better algorithms allow engineers to get more data and then produce better Deep Learning models.

☐ Larger amounts of data allow researchers to try more ideas and then produce better algorithms in less time.

☒ Improvements in the GPU/CPU hardware enable the discovery of better Deep Learning algorithms.

✓ **Correct**

Yes. By speeding up the iterative process, better hardware allows researchers to discover better algorithms.

↗ **Expand**

✓ **Correct**

Great, you got all the right answers.

4. When experienced deep learning engineers work 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?

0 / 1 point

☐ False

☒ True

↗ **Expand**

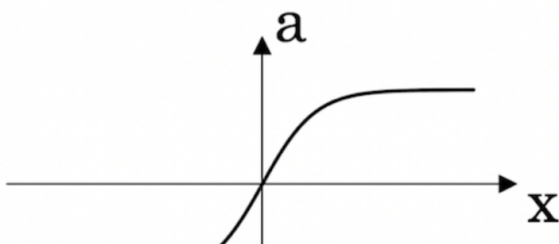
✗ **Incorrect**

No. Finding the characteristics of a model is key to having good performance. Although experience can help, it requires multiple iterations to build a good model.

5. Which of the following depicts a Sigmoid activation function?

0 / 1 point

☒ Figure 1:



 Expand

 **Incorrect**

No! This is the tanh activation function.

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.

 Expand

 **Correct**

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

- ☐ The RNN requires a small number of examples.
- ☒ 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).

- ☐ RNNs are much more powerful than a Convolutional neural Network (CNN).
- ☒ It can be trained as a supervised learning problem.

 **Correct**

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

 Expand

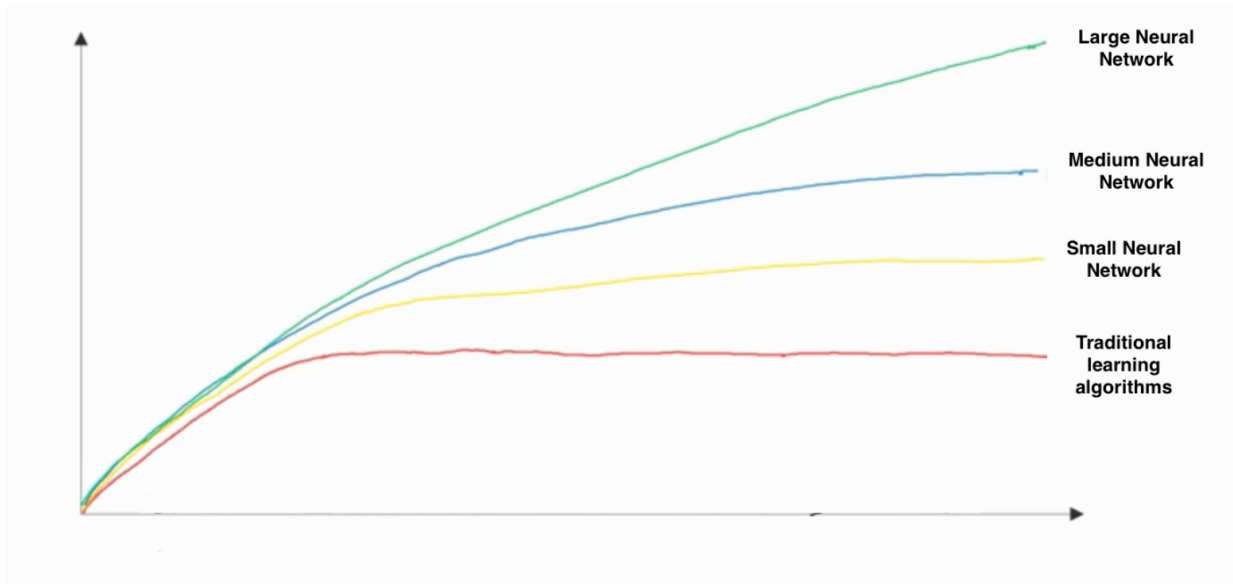
✓ Correct

Great, you got all the right answers.

9.

1 / 1 point

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



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

↗ Expand

✓ Correct

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 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 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.

- ☐ 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.