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

- (●) 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.
- ( ) AI is powering personal devices in our homes and offices, similar to electricity.

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

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

- [x] 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.

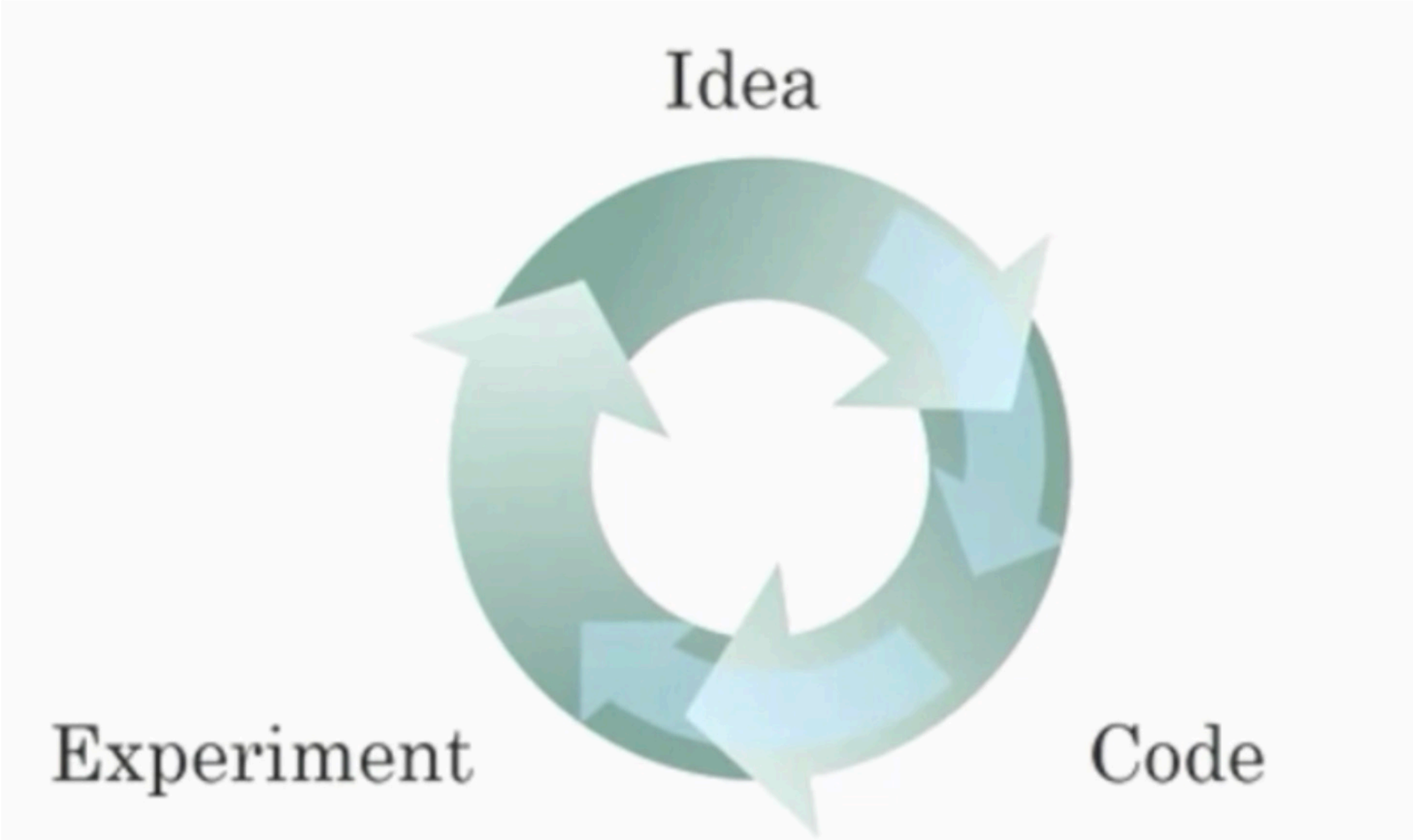
- [ ] Neural Networks are a brand new field.
- [x] We have access to a lot more computational power.

Correct
Yes! The development of hardware, perhaps especially GPU computing, has significantly improved deep learning algorithms' performance.

- [x] 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



- [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.

- [x] 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.

- [x] Being able to try out ideas quickly allows deep learning engineers to iterate more quickly.

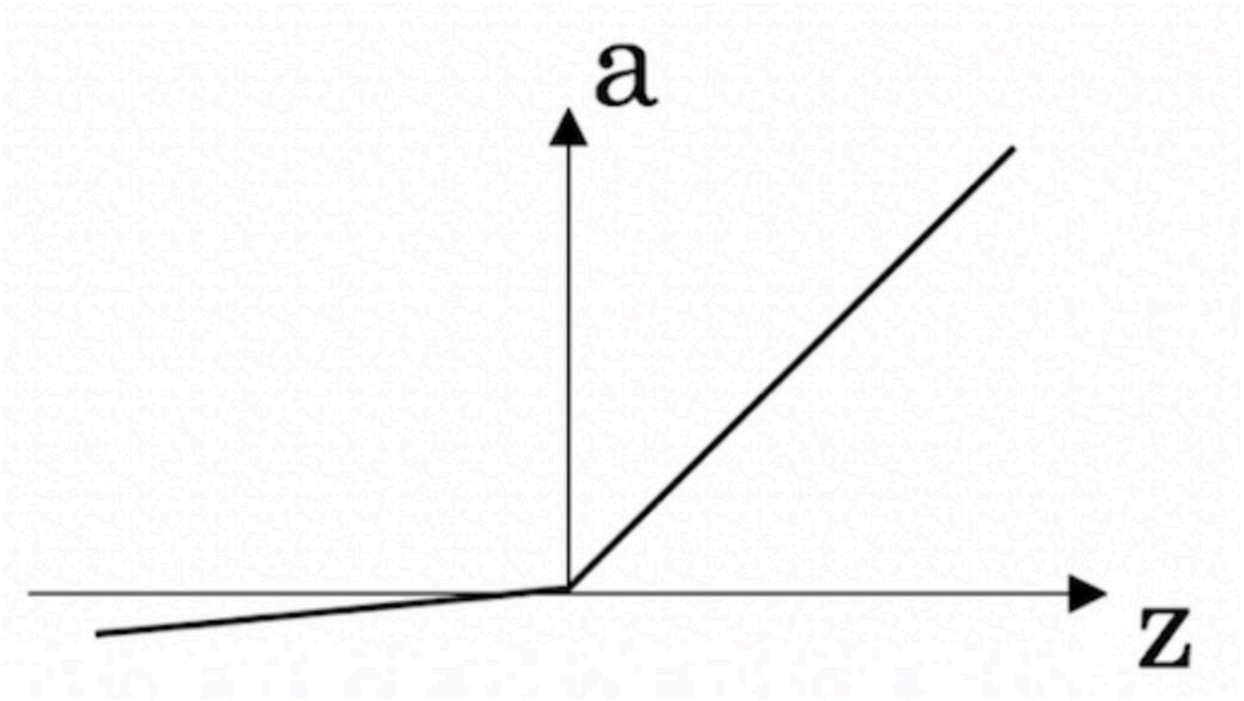
Correct
Yes, as discussed in Lecture 4.

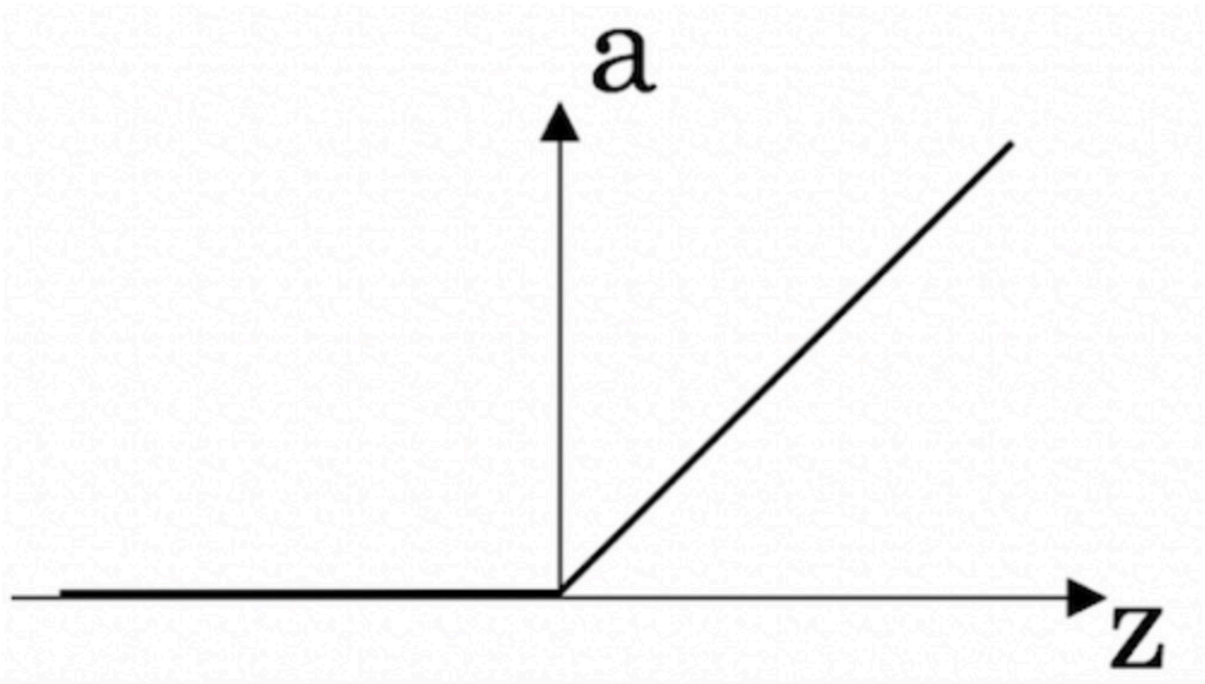
4. When building a neural network to predict housing price from features like size, the number of bedrooms, zip code, and wealth, it is necessary to come up with other features in between input and output like family size and school quality. True/False? **1 / 1 point**

- ( ) True
- (•) False

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

5. Which of the following depicts a Sigmoid activation function? 1 / 1 point





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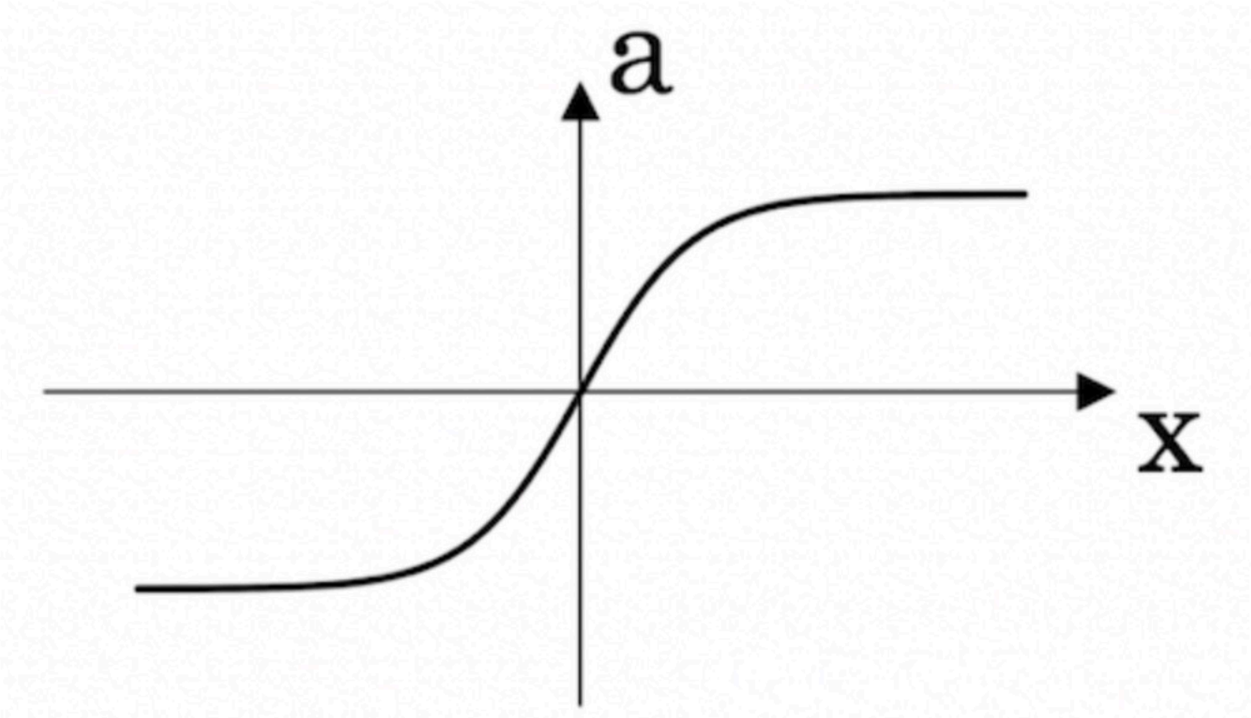
a
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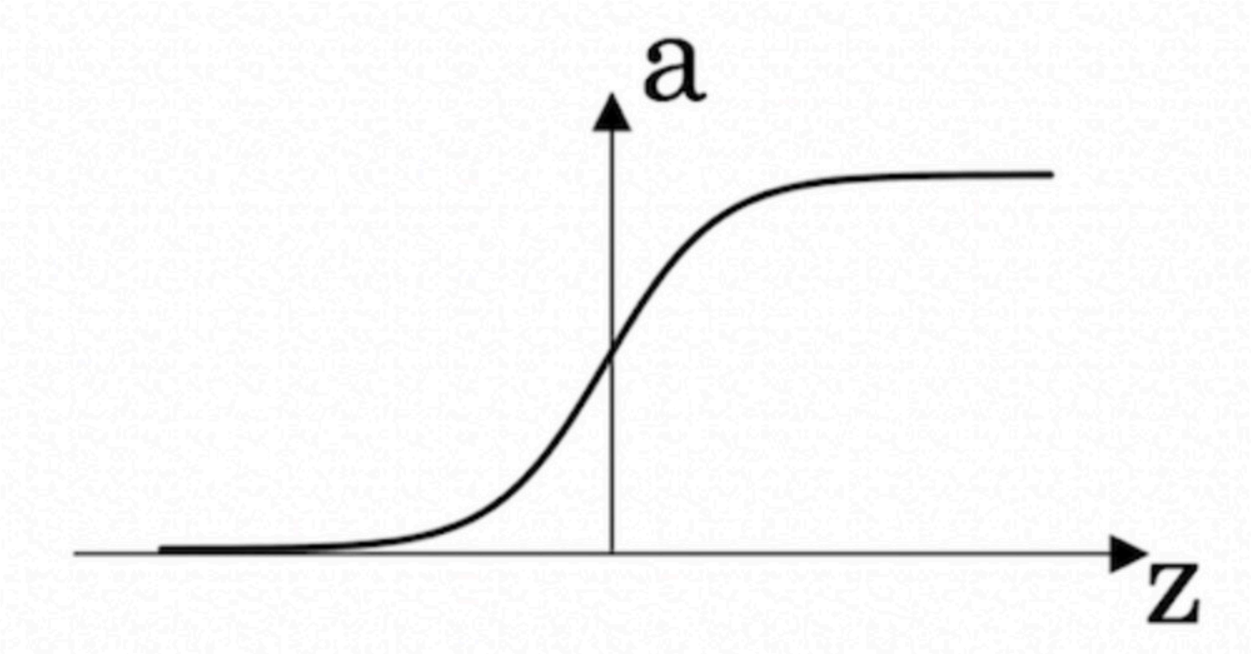
a
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Correct
Correct! This is the sigmoid activation function; this function was changed for the ReLU activation function helping with the training of NN.

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. A dataset is composed of age and weight data for several people. This dataset is an example of "structured" data because it is represented as an array in a computer. True/False? 1 / 1 point

- ( ) False
- (●) True

Correct
Yes, the sequences can be represented as arrays in a computer. This is an example of structured data.

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

1 / 1 point

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

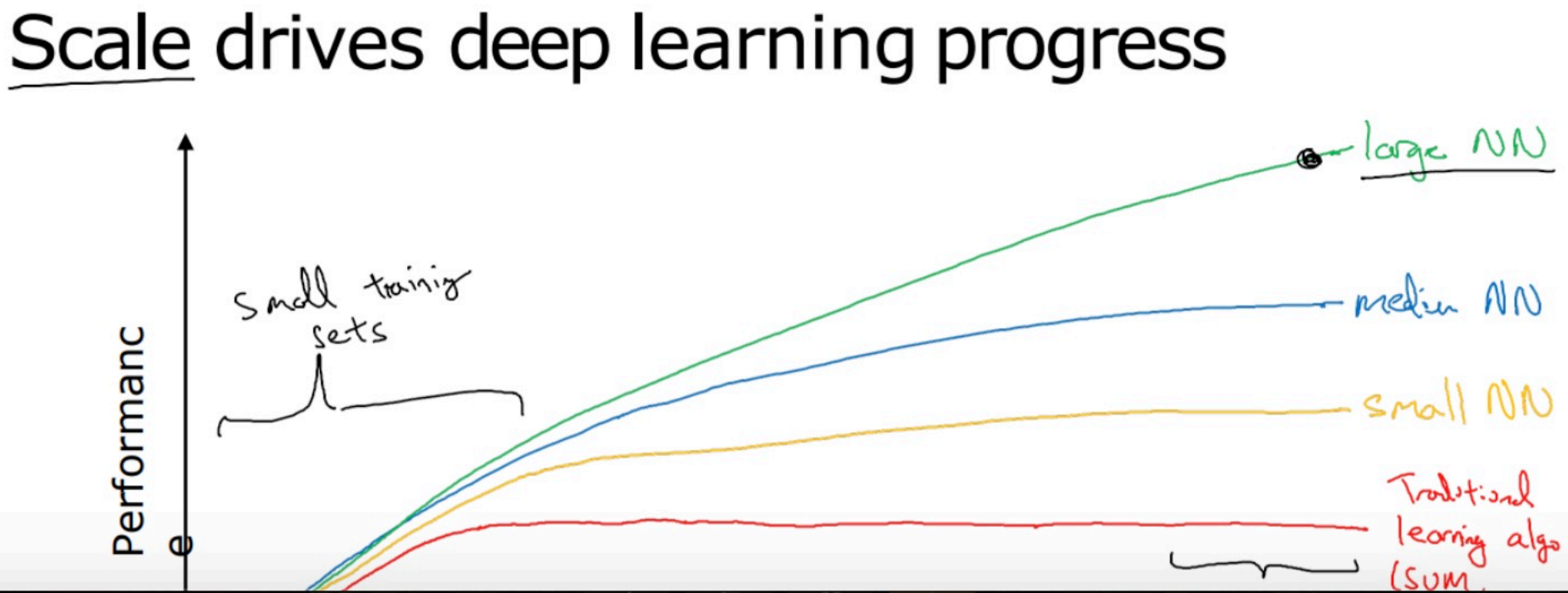
Correct
Yes. We can train it on many pairs of sentences x (English) and y (French).

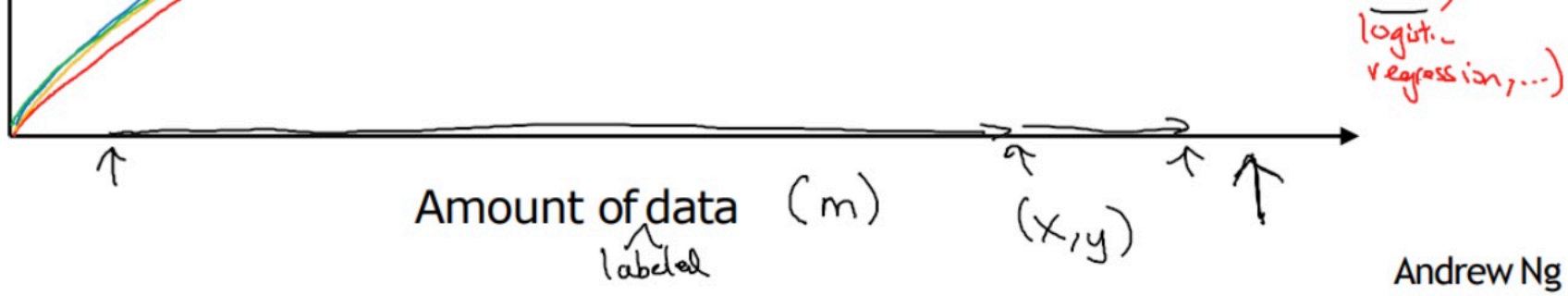
- [x] It is applicable when the input/output is a sequence (e.g., a sequence of words).

Correct
Yes. An RNN can map from a sequence of english words to a sequence of french words.

- [ ] RNNs represent the recurrent process of Idea->Code->Experiment->Idea->....
- [ ] It is strictly more powerful than a Convolutional Neural Network (CNN).

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 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

- [ ] Decreasing the size of a neural network generally does not hurt an algorithm's performance, and it may help significantly.
- [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.
- [x] 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.