✓ # Congratulations! You passed!

| **Grade** | **Latest Submission** | **To pass** 80% or |
| received 80% | **Grade** 70% | higher |

Go to next item

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

- ○ AI has not been able to transform businesses.
- ○ Creating an AI-powered society.
- ⦿ 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.

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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.

- ☑ We have access to a lot more data.

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

- ☑ 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.

⤢ **Expand**

✓ **Correct**
Great, you got all the right answers.

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

Idea

Experiment   Code

☑ 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.

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

☑ 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.

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

↗ **Expand**

⊘ **Correct**

Great, you got all the right answers.

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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?
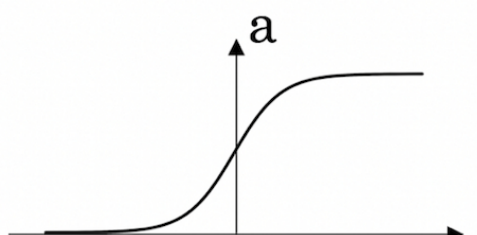
0 / 1 point

○ False

◉ True

↗ **Expand**

⊗ **Incorrect**

Recall that when training a neural network, only the input and output for several examples are given.

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

1 / 1 point

◉ Figure 2:

↗ **Expand**

⊘ **Correct**

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

6. Which of the following are examples of unstructured data? Choose all that apply.

1 / 1 point

☑ Sound files for speech recognition.

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

☑ Images for bird recognition.

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

☑ Text describing size and number of pages of books.

✓ **Correct**
Yes, text documents are examples of "unstructured" data.

☐ Information about elephants' weight, height, age, and the number of offspring.

↗ Expand

⊘ **Correct**
Great, you got all the right answers.

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

1 / 1 point

☐ A set of audio recordings of a person saying a single word.

☑ 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 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.

☐ A dataset with short poems.

↗ Expand

⊘ **Correct**
Great, you got all the right answers.

8. RNNs (Recurrent Neural Networks) are good for data with a temporal component. True/False?
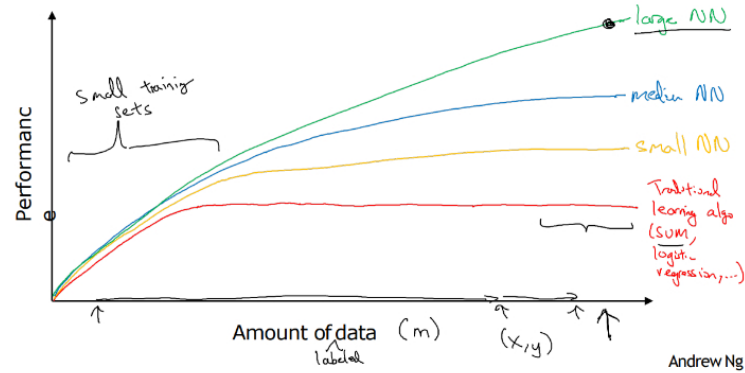
0 / 1 point

◉ False

◯ True

↗ Expand

⊗ **Incorrect**
No, RNN are good to work with sequences, and the elements of the sequence can be sorted by a temporal component.

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?
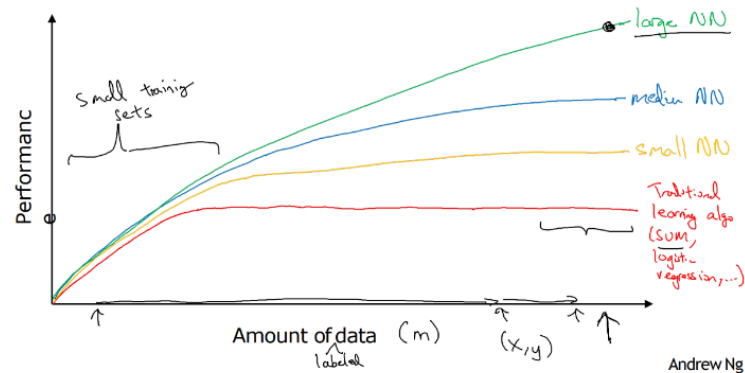
○ True

◉ 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.

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

Scale drives deep learning progress

☑ 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.

☐ Increasing the training set size of a traditional learning algorithm stops helping to improve the performance after a certain size.

☑ 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.

⤢ **Expand**