Quiz 1 (ML basics, week1)

Due Apr 2 at 11:59pm **Points** 10 **Questions** 16 **Time Limit** None
Allowed Attempts 2

Instructions

For each question, choose all answers that you think are correct. Please study the slides before you start. You'll have two chances for each quiz. There is no time limit. Due Friday.

Take the Quiz Again

Attempt History

	Attempt	Time	Score
LATEST	Attempt 1	12 minutes	7.42 out of 10

Score for this attempt: **7.42** out of 10
Submitted Apr 1 at 6:55am
This attempt took 12 minutes.

Question 1 — 0.5 / 0.5 pts

Which of the following breakthrough(s) in AI does *not* use machine learning?

Correct!

- (●) IBM Deep Blue
- ( ) IBM Watson
- ( ) Google Deepmind AlphaGo

Question 2

0.5 / 0.5 pts

How would you describe the relationship between machine learning (ML) and deep learning (DL)?

- ML is a subfield of DL
- Correct! DL is a subfield of ML
- DL supercedes ML

Question 3

0.33 / 0.5 pts

What machine learning techniques were used in AlphaGo (2016)?

- Correct! deep learning
- orrect Answer reinforcement learning
- Correct! supervised learning

Question 4

0.5 / 0.5 pts

What machine learning techniques were used in AlphaGo Zero (2017)?

- Correct! deep learning
- Correct! reinforcement learning
- supervised learning

Question 5

0 / 0.5 pts

What is the relationship between machine learning and natural language processing (NLP)?

- ML is a sufield of NLP
- ou Answered — NLP is a subfield of ML
- orrect Answer — ML and NLP are two subfields of AI, but neither is a subfield of the other.

Question 6

0.33 / 0.5 pts

What techniques are used in autonomous driving cars?

- Correct! — computer vision
- Correct! — deep learning
- orrect Answer — reinforcement learning

Question 7

0 / 0.5 pts

John got 100% accuracy on his training data.
Jane got 90% accuracy on the same training set.
Which model is better?

- John's
- Jane's

ou Answered

orrect Answer

- can't tell

Question 8

1 / 1 pts

Which of the following help reduce overfitting?

- train on a smaller dataset
- use a smaller (i.e., simpler) model

Correct!

- use a held-out set for early stopping

Correct!

- regularization

Correct!

Question 9

1 / 1 pts

For the following dataset, what is the leave-one-out cross-validation error of 1-NN?

(a) Consider the following data set with two real-valued inputs x (i.e. the coordinates of the points) and one binary output y (taking values + or -). We want to use k-nearest neighbours (K-NN) with Euclidean distance to predict y from x.

Calculate the leave-one-out cross-validation error of 1-NN on this data set. That is, for each point in turn, try to predict its label y using the rest of the points, and count up the number of misclassification errors.

- 0

- 0.1
- 0.3

Correct!

- 0.5
- 0.7
- 1

Question 10

1 / 1 pts

For the above dataset, what is the leave-one-out cross-validation error of 3-NN?

- 0

Correct!

- 0.1
- 0.3
- 0.5
- 0.7
- 1

Question 11

0.25 / 0.5 pts

Between any two points in space, what's the possible relationship between their Euclidean and Manhattan distances?

Correct!

- [x] Euclidean < Manhattan

orrect Answer

- [ ] Euclidean = Manhattan
- [ ] Euclidean > Manhattan

Question 12

1 / 1 pts

Both Euclidean and Manhattan distances are special cases of the Minkowski distance. Match the following:

Correct!

Manhattan distance — l_1 norm

Correct!

Euclidean distance — l_2 norm

Correct!

Chebyshev distance — l_{infinity} norm

Correct!

Minkowski distance — l_p norm (p >= 0)

Question 13

0.5 / 0.5 pts

Who won the Turing Award in 2018?

- [ ] Andrew Ng

Correct!

- [x] Geoff Hinton

Correct!

- [x] Yann LeCun
- [ ] Sammy Bengio

Correct!

- [x] Yoshua Bengio

Question 14

0 / 0.5 pts

Which of the following was _not_ a reason that almost suddenly made deep learning work after ~30 years of trying?

- more training data
- more computing power

orrect Answer

- better mathematical formulation and more rigorous theoretical foundations

ou Answered

- GPUs

Question 15

0 / 0.5 pts

The landmark event that put deep neural nets into the center stage of AI is:

- Hinton's 2006 paper

ou Answered

- Deepmind AlphaGo (2017)

orrect Answer

- AlexNet won the 2012 ImageNet competition by a large margin

Google's release of TensorFlow

Question 16

0.5 / 0.5 pts

Which of the following statements about deep learning is/are true?

Deep learning is simply deeper than the rest of machine learning.

Deep learning can solve NP-hard problems efficiently.

Correct!

The rebranding of deep neural networks as "deep learning" was misleading and highly controversial

Correct!

Deep learning aims to automate machine learning by reducing the need for manual feature engineering.

Quiz Score: **7.42** out of 10