[Quiz] Linear Classification

- Due 16 Mar at 23:59
- Points 11
- Questions 9
- Time limit None
- Allowed attempts 2

This quiz is no longer available as the course has been concluded.

Attempt history

	Attempt	Time	Score
KEPT	Attempt 2	2 minutes	11 out of 11
LATEST	Attempt 2	2 minutes	11 out of 11
	Attempt 1	11 minutes	10.5 out of 11

Score for this attempt: 11 out of 11
Submitted 11 Mar at 17:37
This attempt took 2 minutes.

Question 1
1 / 1 pts
Select all that apply. Which are the following properties of the Rosenblatt's Perceptron cause it to be difficult to use in the real world?

- [ ] It is never guaranteed to converge

Correct!

- [x] It only works for binary classifcation tasks
- [ ] It only works for data that contains more than 2 classes

Correct!

- [x] It only converges for data that is linearly separable

Question 2
1 / 1 pts
If the data is linearly separable, the perceptron algorithm is guaranteed to find a separating decision boundary?
Correct!

- (•) True
- ( ) False

Question 3
1 / 1 pts

From testing, we acquired the following confusion matrix for brain cancer detection.

	no cancer	cancer
no cancer	80	2
cancer	12	8

Using the confusion matrix from the notes, how many **True Positives** did our model get correct?

Correct!

- (•) 8
- ( ) 12
- ( ) 2
- ( ) 80

Question 4
1 / 1 pts

From testing, we acquired the following confusion matrix for brain cancer detection.

	no cancer	cancer
no cancer	80	2
cancer	12	8

Using the confusion matrix from the notes, what is the **accuracy**? Round to the nearest 2nd decimal or percentage!

Correct!

- (•) 0.86
- ( ) .80
- ( ) .98
- ( ) .40

Question 5
1 / 1 pts

From testing, we acquired the following confusion matrix for brain cancer detection.

	no cancer	cancer
no cancer	80	2
cancer	12	8

Using the confusion matrix from the notes, what is the **TPR/recall/sensitivity score**? Round to the nearest 2nd decimal or percentage!

- ( ) .98

Correct!

- (•) .40
- ( ) .50
- ( ) .80

Question 6
1 / 1 pts
Rosenblatt's perceptron requires which of the following binary labels?

- ( ) {0, 1}
- ( ) {0, 1, 2}
- ( ) {1, 2}

Correct!

- (•) {-1, 1}

Question 7
1 / 1 pts
True or false. The variable z is typically used as an indeterminate variable to store $\mathbf{w}^T\mathbf{x}$ before the sign activation function is applied?
Correct!

- (•) True
- ( ) False

Question 8
1 / 1 pts
Which of the following is the equation Rosenblatt developed to update the weights of the Perceptron?
Correct!

- (•) $\mathbf{w}_{k+1} = \mathbf{w}_k + \alpha y_i \mathbf{x}_i$
- ( ) $\mathbf{w}_{k+1} = \mathbf{w}_k + \alpha \mathbf{x}_i$
- ( ) $\mathbf{w}_{k+1} = \mathbf{w}_k - \alpha \mathbf{x}_i$
- ( ) $\mathbf{w}_{k+1} = \mathbf{w}_k - \alpha y_i \mathbf{x}_i$

Question 9
3 / 3 pts

Match the metrics with their corresponding definition.

Correct!
TPR/Recall

The ratio over the number

Correct!
PPV/Precision

The ratio of the positive pre

Correct!
TNR/Specificity

The ratio over the number

Correct!
Accuracy

The ratio of correctly classi

Quiz score: 11 out of 11