

Course > Week 6: Machine Learning 2 > Week 6 Quiz: Machine Learning 2 > Week 6 Quiz

Week 6 Quiz

☐ Bookmark this page

Q1

10.0/10.0 points (graded)

When a decision tree is fully grown, it is likely to overfit the training data.

You have used 1 of 1 attempt

False		
● True		

Q2

Submit

10.0/10.0 points (graded)

You are trying to predict the average rainfall in California as a function of the measured currents and tides in the Pacific ocean in the previous six months. This is a:

Classification problem	
■ Regression problem ✓	

Submit You have used 1 of 1 attempt

Q3

10.0/10.0 points (graded)

The idea of boosting is to train weak learners on weighted training examples. Check all that apply.

- ☐ Give large weights to easy examples to get rid of them
- The classification output is a majority voting of all weak classifiers outputs
- ☑ Give large weights to hard examples to focus on those in the next steps



Submit

You have used 1 of 1 attempt

Q4

10.0/10.0 points (graded)

A decision tree generated from an unbalanced training data may be biased towards the majority class. In other words, it will learn the majority class, will have a high accuracy, even though, it will be unable to predict the minority class examples correctly (e.g., a dataset of 95% negative examples and 5% positive examples).

False

True

Submit

You have used 1 of 1 attempt

Q5

10.0/10.0 points (graded)

Check all that apply.
Naive Bayes classifier models $p(y x)$ and $p(y)$ and then used Bayes rule to obtain $p(x y)$
Naive Bayes classifier models $p(x y)$ and $p(y)$ and then used Bayes rule to obtain $p(y x)$
Naive Bayes classifier models $p(x y)$ and $p(x)$ and then used Bayes rule to obtain $p(x y)$
Naive Bayes classifier is a discriminative method.
✓ Naive Bayes classifier is a generative method.
Q6
10.0/10.0 points (graded) $ \begin{array}{c cccc} a & b & f \\ \hline 1 & 1 & 1 \\ 1 & 0 & 0 \\ 0 & 1 & 1 \\ 0 & 0 & 0 \end{array} $
Can the boolean function f be represented with a perceptron?
● True
○ False
Submit You have used 1 of 1 attempt

Q7

10.0/10.0 points (graded)

Consider the toy example in slide 8, decision trees handout. Suppose there is one additional feature "application_number". Suppose all the examples in this dataset have different values {v1, v2, v3, ..., v14} for application_number, corresponding to the order they appear in the table.

- application_number will have the lowest gain and hence will never be picked at the root
- application_number will be picked at the root as a first choice to split the data because it has the highest gain
- application_number is the most discriminative feature
- application_number is a useless feature and should be discarded



Submit

You have used 1 of 2 attempts

Q8

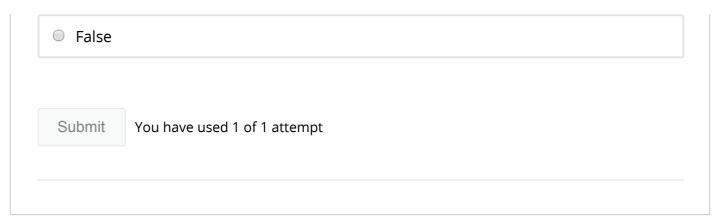
10.0/10.0 points (graded)

Consider the toy example in slide 8, decision trees handout. Suppose there is one additional feature "application_number". Suppose all the examples in this dataset have different values {v1, v2, v3, ..., v14} for application_number, corresponding to the order they appear in the table.

Now, we define a new feature called "even_or_odd", which takes on the value "even" for {v2, v4, v6, ..., v14}, and takes on the value "odd" for {v1, v3, v5, ..., v13}.

- even_or_odd will have the same gain as "Highest Degree"
- even_or_odd will have the same gain as "Work Experience"

even_or_odd will have the same gain as "Favorite Language"			
even_or_odd will have the same gain as "Needs Work Visa"			
Submit You have used 1 of 2 attempts			
Q9			
10.0/10.0 points (graded) Check all that apply.			
☑ The perceptron is an iterative classification method			
☐ The perceptron will always converge even if the data is not linearly separable			
☐ The percetron is a generative classification method			
☑ The perceptron starts with a random hyperplane then adjust its weights to separate the data			
☑ The perceptron is the simplest neural network			
Submit You have used 1 of 2 attempts			
Q10			
10.0/10.0 points (graded) Logistic regression outputs a value in [0,1] (within the range of 0 and 1) right after sigmoid function.			
● True			



© All Rights Reserved

