Review Test Submission: Quiz 07-08

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Course	EN.605.649.82.FA20 Introduction to Machine Learning
Test	Quiz 07-08
Started	10/21/20 9:30 PM
Submitted	10/21/20 9:37 PM
Due Date	10/24/20 11:59 PM
Status	Completed
Attempt Score	Grade not available.
Time Elapsed	7 minutes out of 30 minutes
Instructions	Ten multiple choice or true/false questions will be presented on material from Module 09 and 10 in the course. Please complete the quiz in the time allotted. To best evaluate your understanding, you should try to complete the quiz without using notes or online resources; although, using such resources is permitted if necessary. To encourage this, only 30 minutes will be allotted to complete the quiz. You will have two attempts.
Results Displayed	Submitted Answers, Incorrectly Answered Questions

Question 1

0 out of 10 points

Since both logistic regression and Naïve Bayes classification are linear classifiers, under what circumstances might you choose one over the other?

Selected Answer: B. Choose logistic regression whenever the data is not Gaussian.

Question 2

10 out of 10 points

What is the main advantage to including a bias term in a linear model such as a perceptron?

Selected Answer: E. Bias serves as a threshold or shape parameter that provides greater freedom in defining an appropriate model.

Question 3

10 out of 10 points

What do the Lagrange multipliers do in the algorithm for training a support vector machine?

Selected Answer: C.
They allow the constraints to be included in the quadratic objective function so that more efficient methods, such as gradient descent, can be used to find the support vectors.

Question 4

10 out of 10 points

What should you use as a decision rule when applying a one-vs-one strategy for multi-class classification?

Selected Answer: E.
Run all n(n – 1)/2 classifiers and vote. This can be a simple plurality vote or a weight vote where the weights are based on how strongly the classifier picks a class.

Question 5

10 out of 10 points

Why is it reasonable to expect a maximum margin classifier to reduce the sample complexity of the underlying classification problem?

Selected Answer: A.
The wider the margin, the fewer support vectors needed to identify the class boundaries.

Question 6

10 out of 10 points

Adaline and the perceptron use fundamentally different learning procedures.

Selected Answer: False

Question 7

10 out of 10 points

In epsilon-SVR, epsilon is a tunable parameters. What is the effect of varying this parameter?

Selected Answer: D.
By varying epsilon, you are controlling for the amount of noise you will tolerate in the regression model.

Question 8

10 out of 10 points

Any function that transforms the data to a new space can be used as a kernel function.

Selected Answer: False

Question 9

10 out of 10 points

What is the main, expected behavior of using a kernel function on a linear classifier?

Selected Answer: D. It projects the data into a higher-dimensional space, which then has a higher probability of being linearly separable.

Question 10

10 out of 10 points

Why might we want to replace the step function used by the perceptron and Adaline with the logistic function?

Selected Answer: D. The logistic function is differentiable, which makes it amenable to a gradient descent learning procedure.

Wednesday, October 21, 2020 9:37:59 PM EDT

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