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Lecture 11
Maximum Margin Classifiers and the SVM

Lecture 12
Decision Trees

Week 6 Quiz

Quiz due Apr 11, 2017 05:00 IST

Week 6 Project: Classification

Project due Apr 11, 2017 05:00 IST

Week 6 Discussion Questions

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Week 6 Quiz

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Text Input

1/1 point (graded)

The Euclidean distance of the data point closest to the decision boundary of a classifier is called the _____.

margin



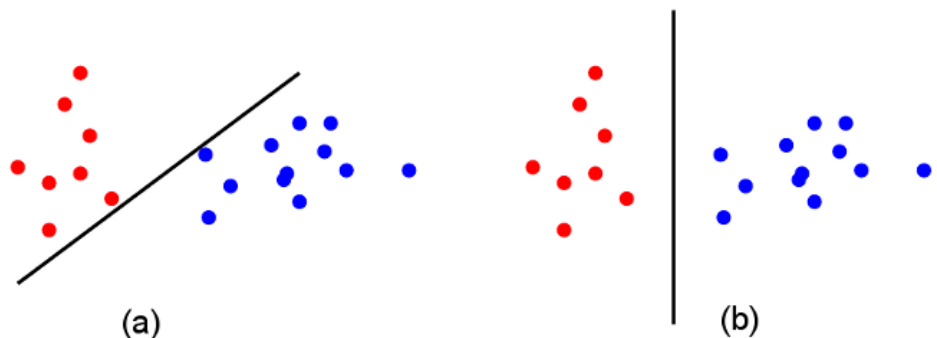
Submit

You have used 1 of 1 attempt

✓ Correct (1/1 point)

Multiple Choice

1/1 point (graded)



Which figure could correspond to the decision boundary of a support vector machine?

☐ (a)

☒ (b) ✓

☐ both

☐ neither

Submit

You have used 1 of 1 attempt

✓ Correct (1/1 point)

Multiple Choice

1/1 point (graded)

The support vector machine finds the decision boundary that minimizes the probability of making a classification error.

☐ TRUE☒ FALSE ✓

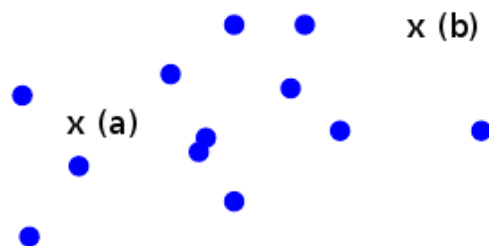
Submit

You have used 1 of 1 attempt

✓ Correct (1/1 point)

Multiple Choice

1/1 point (graded)



The figure contains a data set defined by the blue dots. Also shown in the figure are two locations marked by an "x" with a corresponding label. Which point(s), if any, are contained in the convex hull defined by the blue data points?

☒ (a) ✓☐ (b)☐ both

☐ neither

Submit

You have used 1 of 1 attempt

✓ Correct (1/1 point)

Dropdown

1/1 point (graded)

The support vector machine defines a ____ objective function whose ____ optimal solution can be found using algorithmic techniques.

convex, globally ▾



Submit

You have used 1 of 1 attempt

✓ Correct (1/1 point)

Numerical Input

1/1 point (graded)

In a binary decision tree, every internal node has ____ children.

2

✓ Answer: 2

2

Submit

You have used 1 of 1 attempt

✓ Correct (1/1 point)

Multiple Choice

1/1 point (graded)

As the complexity of a model increases to the point where overfitting occurs, continuing to increase the model complexity will cause the training error to (a) and the testing error to (b).

☐ (a) decrease, (b) decrease

☐ (a) increase, (b) decrease

☒ (a) decrease, (b) increase ✓

☐ (a) increase, (b) increase

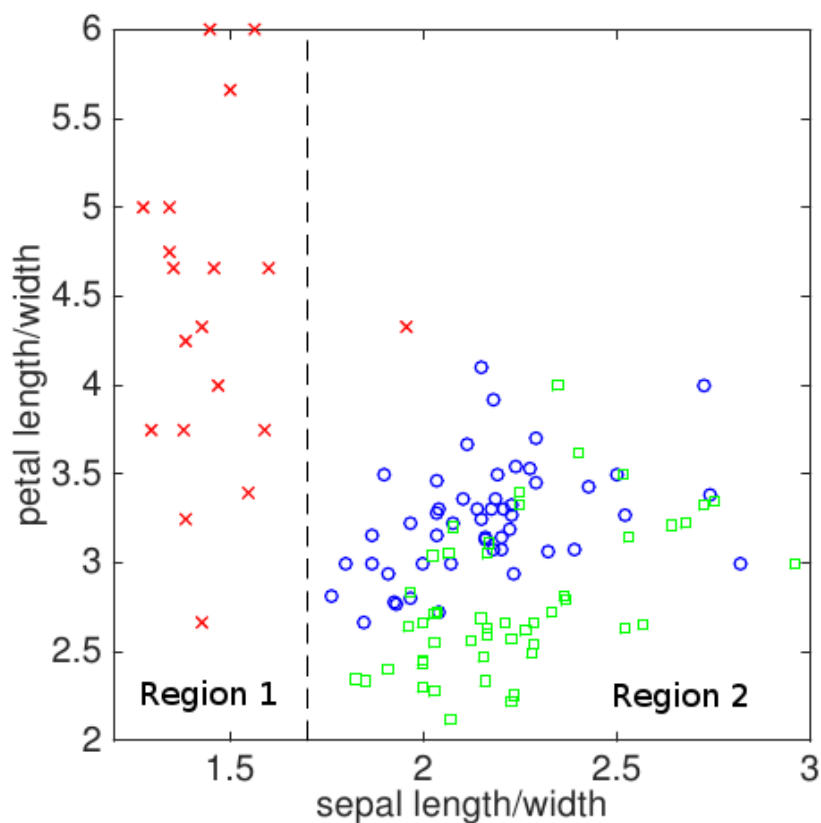
Submit

You have used 1 of 1 attempt

✓ Correct (1/1 point)

Multiple Choice

1/1 point (graded)



In the figure shown, along which dimension and in which region would the next split most likely be made when constructing a binary decision tree?

☐ In Region 1 along the "petal" dimension

☒ In Region 2 along the "petal" dimension ✓

☐ In Region 1 along the "sepal" dimension

☐ In Region 2 along the "sepal" dimension

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You have used 1 of 1 attempt

✓ Correct (1/1 point)

Text Input

2/2 points (graded)

(In this problem, the answers should be a single word based on concepts we discussed this week.)

The procedure of resampling from a data set in order to calculate multiple instances of a statistic is called:

bootstrap



The procedure of combining multiple classifiers in a majority vote is called:

bagging



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You have used 1 of 1 attempt

✓ Correct (2/2 points)

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