Nanoquiz Week 3

The questions below are due on Thursday March 01, 2018; 09:50:00 AM.

Nanoquiz Instructions

Nanoquizzes are just like any other tutor exercise, except that they are timed, and that some questions allow a limited number of submissions. When the timer hits zero, you will be prevented from making any further submissions to the nanoquiz, and the answers will be displayed, so **please make sure you have submitted something before that occurs**.

Note that you are free to use any materials you want (electronic or otherwise, including notes, calculators, Python, and Wikipedia) during the nanoquiz, but you are **not** allowed to converse with other humans (including through text message, email, etc).

1) FEATURES

Jody is trying to classify cell phone companies based on examples. The possible phone companies in their area are:

1. AT&T,
2. Verizon,
3. T-mobile,
4. Sprint, and
5. Alcatel

Jody's training examples are:

- AT&T, $+1$
- Verizon, -1
- T-mobile, $+1$
- Alcatel, $+1$

Jody wants to use a one-hot encoding to make the data into feature vectors.

1) What is D, the number of dimensions of the feature vector?

Enter an integer

Save Submit View Answer

As staff, you are always allowed to submit. If you were a student, you would see the following:

You have infinitely many submissions remaining.

2) The data is linearly separable. Is it linearly separable through the origin?

--

Save Submit View Answer

As staff, you are always allowed to submit. If you were a student, you would see the following:

You have infinitely many submissions remaining.

3) Provide parameters for a linear separator (it may go through the origin or not; any separator is fine).

Enter a Python list of numbers, with no nesting, of the separator parameters: first the parameters for θ then the value of θ_0, for example $[\theta_1, ..., \theta_D, \theta_0]$.

Save Submit View Answer **100.00%**

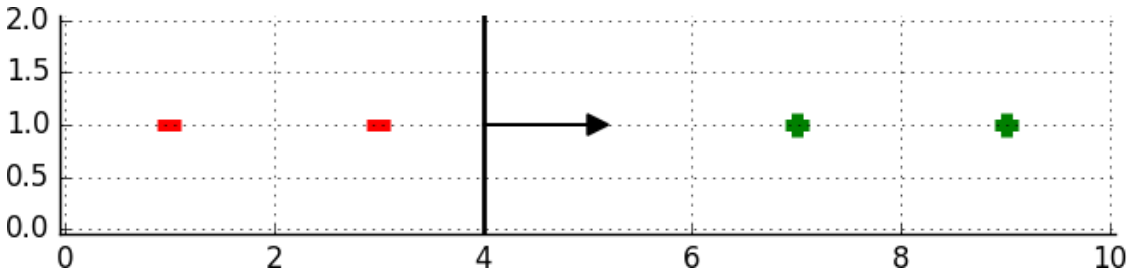
As staff, you are always allowed to submit. If you were a student, you would see the following:

You have infinitely many submissions remaining.

2) MARGIN

For each of the figures below, provide the margin of the separator with respect to all of the data (that is, the minimum, over the data points, of the margin of that data point with respect to the separator). The two points on the left are labeled -1, the two points on the right are labeled +1. (Plots in order below)

1)



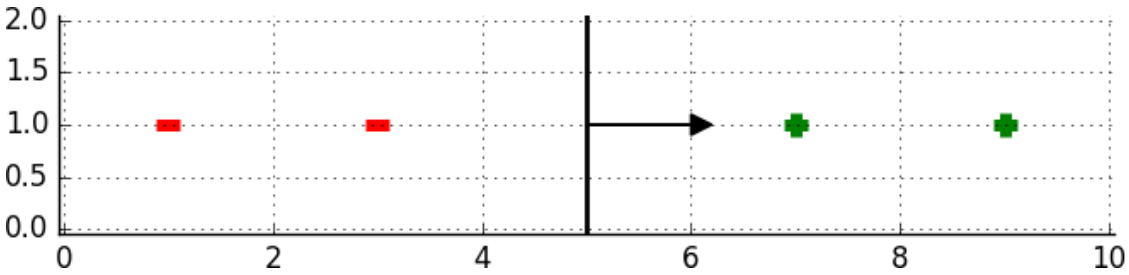
Enter the margin.

Save Submit View Answer

As staff, you are always allowed to submit. If you were a student, you would see the following:

You have infinitely many submissions remaining.

2)



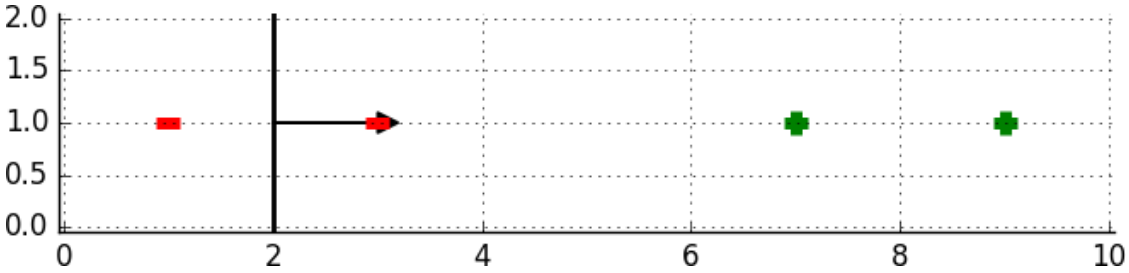
Enter the margin.

Save Submit View Answer

As staff, you are always allowed to submit. If you were a student, you would see the following:

You have infinitely many submissions remaining.

3)



Enter the margin.

Save Submit View Answer

As staff, you are always allowed to submit. If you were a student, you would see the following:

You have infinitely many submissions remaining.

4) Which one would you expect to generalize best to new data drawn from the same source?

Enter which plot above (1, 2, or 3).

Save Submit View Answer

As staff, you are always allowed to submit. If you were a student, you would see the following:

You have infinitely many submissions remaining.