

Lesson 6:  
Support Vector Machines

SEARCH

RESOURCES

CONCEPTS

✓ 2. Which line is better?

✓ 3. Minimizing Distances

✓ 4. Error Function Intuition

✓ 5. Perceptron Algorithm

✓ 6. Classification Error

✓ 7. Margin Error

✓ 8. (Optional) Margin Error Calculation

✓ 9. Error Function

✓ 10. The C Parameter

✓ 11. Polynomial Kernel 1

✓ 12. Polynomial Kernel 2

✓ 13. Polynomial Kernel 3

✓ 14. RBF Kernel 1

Recap & Additional Resources

Recap

In this lesson, you learned about Support Vector Machines (or SVMs). SVMs are used for classification problems. You saw three different ways that SVMs can be

1. Maximum Margin Classifier

2. Classification with Inseparable Classes

3. Kernel Methods

Maximum Margin Classifier

When your data can be completely separated, the linear version of SVMs attempt distance from the linear boundary to the closest points (called the support vect saw that in the picture below, the boundary on the left is better than the one o



Classification with Inseparable Classes

Unfortunately, data in the real world is rarely completely separable as shown in this reason, we introduced a new hyper-parameter called **C**. The **C** hyper-paran flexible we are willing to be with the points that fall on the wrong side of our div value of **C** ranges between 0 and infinity. When **C** is large, you are forcing your errors than when it is a small value.

Note: when C is too large for a particular set of data, you might not get co because your data cannot be separated with the small number of errors a large value of C.

The C Parameter



Small C

Large margin

May make classification errors

Large C

Classifies po

May have a sm

Kernels

https://classroom.udacity.com/nanodegrees/nd230-sc/parts/0d73ea2d-93ac-4c4d-aba4-3dadf31dcda7/modules/1a44bbc1-0f93-46fc-a21d-8aeca13342e1/lessons/...

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