MITx 6.86x

Machine Learning with Python-From Linear Models to Deep Learning

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4. Hinge Loss and Objective Function

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Exercises due Feb 15, 2023 08:59 -03   Completed

Hinge Loss and Objective Function
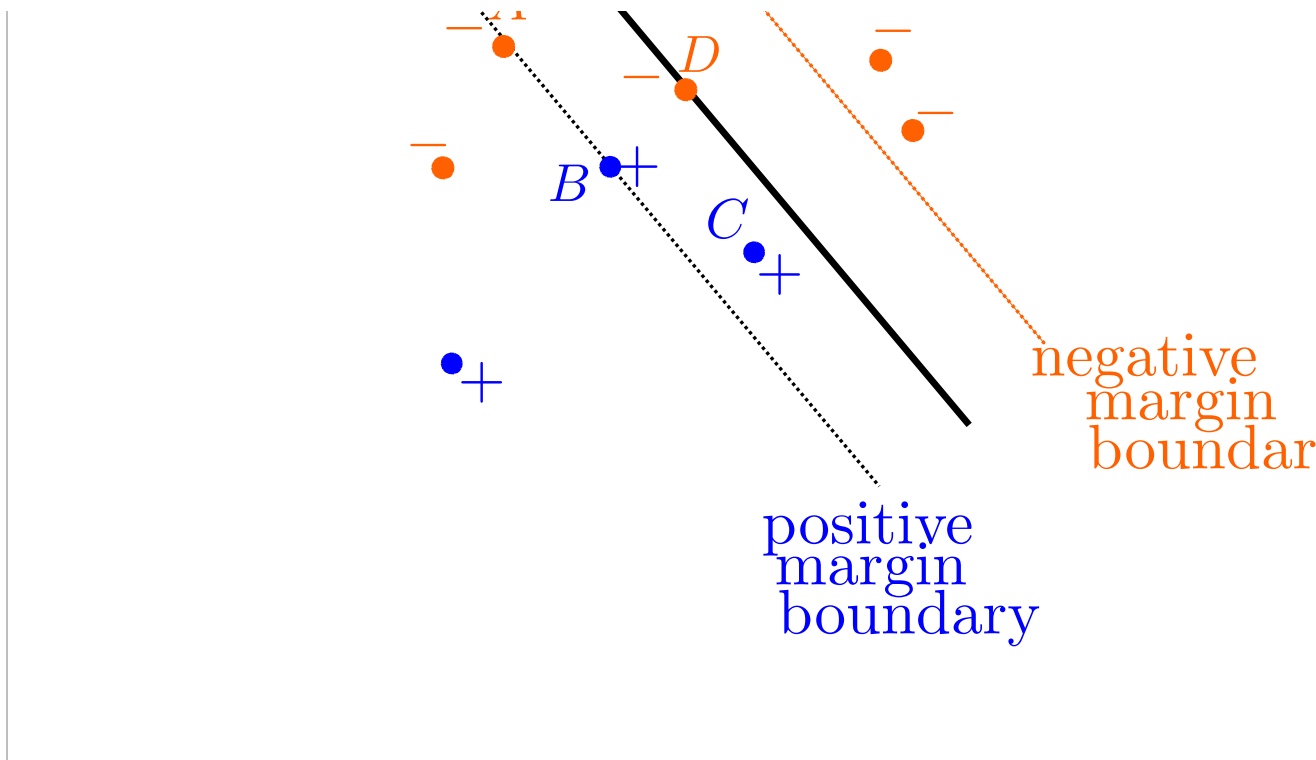

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Video

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Transcripts

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Hinge Loss Exercise 1

3/3 points (graded)

Compute the output of Hinge Loss function (as described in the video) for the following

$\text{Loss}_h(0) =$ | 1 |

$\text{Loss}_h(0.2) =$ | 0.8 |

$\text{Loss}_h(-10) =$ | 11 |

| Submit | You have used 1 of 2 attempts

negative
margin
boundar

positive
margin
boundary

What is the hinge loss of point A, $\text{Loss}_h(y^{(a)}(\theta \cdot x^{(a)} + \theta_0))$?

- ○ 0

- ○ between 0 and 1

- ○ 1

- ● 2

What is the hinge loss of point B, $\text{Loss}_h(y^{(b)}(\theta \cdot x^{(b)} + \theta_0))$?

- ● 0

- ○ between 0 and 1

- ○ 1

What is the hinge loss of point C, $\text{Loss}_h(y^{(c)}(\theta \cdot x^{(c)} + \theta_0))$?

- ○ 0

Submit   You have used 1 of 3 attempts

💾 Your answers were previously saved. Click 'Submit' to grade them.

Regularization

1/1 point (graded)

Remember that for points (x, y) on the boundary margin, the distance from the decision
$\dfrac{1}{||\theta||}$. Thus

$$y^{(i)}(\theta \cdot x^{(i)} + \theta_0) = 1.$$

And

$$\frac{y^{(i)}(\theta \cdot x^{(i)} + \theta_0)}{||\theta||} = \frac{1}{||\theta||}.$$

Now our goal is to maximize the margin, that is to maximize $\dfrac{1}{||\theta||}$. Which of the follo
to maximizing $\dfrac{1}{||\theta||}$?

○ maximizing $\dfrac{1}{||\theta||^2}$

○ minimizing $||\theta||$

◉ maximizing $\sqrt{||\theta||}$

✔

Submit   You have used 1 of 2 attempts

Objective

✖

Submit   You have used 2 of 2 attempts

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Discussion