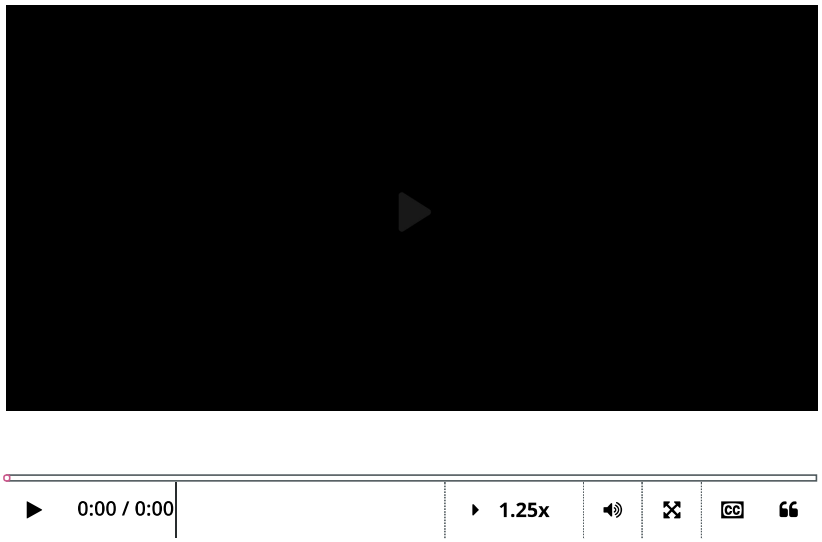
3. Margin Boundary

Exercises due Sep 23, 2020 05:29 IST *Completed*

Margin Boundary



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The **decision boundary** is the set of points x which satisfy

$$\theta \cdot x + \theta_0 = 0.$$

The **Margin Boundary** is the set of points x which satisfy

$$\theta \cdot x + \theta_0 = \pm 1.$$

So, the distance from the decision boundary to the margin boundary is $\frac{1}{|| \theta ||}$.

Margin Boundary 1

1/1 point (graded)

As explained in the lecture video, margin boundary is the set of points (x, y) at which the distance from the decision boundary to (x, y) is $\frac{1}{||\theta||}$. Now, what is the value of $y^{(i)} (\theta \cdot x^{(i)} + \theta_0)$ for a correctly classified point $(x^{(i)}, y^{(i)})$ on the margin boundary?

1 ✔

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Margin Boundary 2

1/1 point (graded)

What happens to the margin boundaries as we increase $|| \theta ||$?

- [x] The margin boundaries move closer to the decision boundary
- [ ] The margin boundaries move further away from the decision boundary
- [ ] The margin boundaries converge to a certain location no matter what

✔

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Discussion

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Topic: Unit 1 Linear Classifiers and Generalizations (2 weeks):Lecture 3 Hinge loss, Margin boundaries and Regularization / 3. Margin Boundary

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?	Minute 4 says "as we move away from the decision boundary, the linear function increases at rate related to magnitud of vector theta" Probably I misunderstood what was meant because I don't see how the linear function increases in relation to the magnitud of theta. Th...	2
☑	How is the distance between the decision and margin boundary is given by 1/(Norm of theta) How is the distance between the decision and margin boundary is given by 1/(Norm of theta), no explanation is given in this video .	5
?	Question about the intuitive explain "We know that the magnitude of the linear function itself, as we move away from the decision boundary, increases at a rate related to t...	5
💬	"sine distance" in transcript The "sine distance" in the transcript should be "signed distance." Definitely homonyms, and easy to see how a transcription error is mad...	5
💬	Is this topic same/related to 'support vector machine'? In some other course they talk about SVM but the content covered there seem to be similar to the ones we study in this chapter.	2
?	why the label is part of the regularization term If it's the distance then it should be (theta * x_i + theta_0)/norm(theta). This would give the distance from a point to a plane along with it...	2
?	Margin Boundaries	5
?	Margin Boundary 1 Can someone please explain to me what this question is asking?	2

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