

# **CS 59000 Statistical machine learning**

## **Lecture 13**

Alan Qi

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# Outline

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Review of Fisher's linear discriminant

Perceptron

Generative models for classification

Conditional classification models:

- Logistic regression

- Probit regression

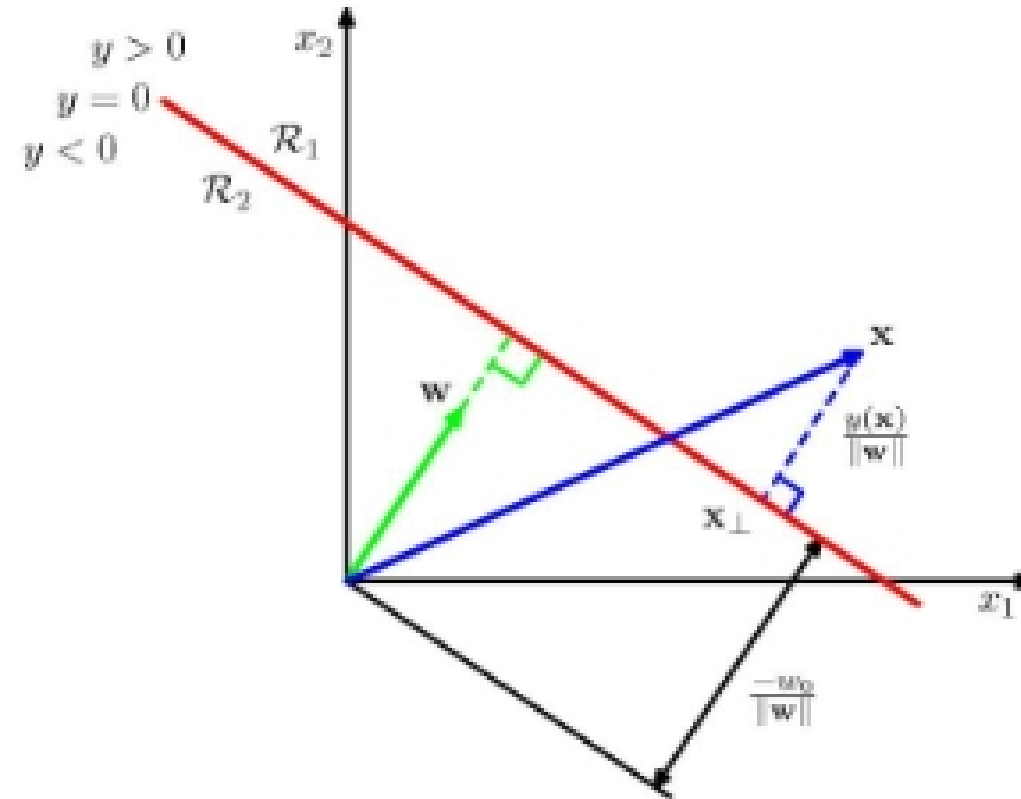
Generalized linear models

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# Distance from $\mathbf{x}$ to decision surface

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$$y(\mathbf{x}) = \mathbf{w}^T \mathbf{x} + w_0$$



Hint: 
$$\mathbf{x} = \mathbf{x}_\perp + r \frac{\mathbf{w}}{\|\mathbf{w}\|}$$