Linear Methods for Classification

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Abstract

The following are notes on the key results from the **Elements of Statistical Learning** text. They were primarily derived from course notes and readings in the Stanford STATS 315: *Modern Applied Statistics* series.

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1 Discriminant analysis

2 LDA vs. least squares fit

2.1 Least squares regression coefficient is identical to LDA coefficient, up to scalar multiple

2.2 Difference between LDA and OLS coefficient

3 Logistic regression

3.1 Derivation of logistic rule

3.2 Two-class algorithm for logistic regression

3.3 Newton-Raphson IRLS algorithm