logistic regression

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The Introduction of logistic regression

* In statistics, logistic regression is a regression model where the dependent variable (DV) is categorical. This article covers the case of a binary dependent variable—that is, where the output can take only two values, "0" and "1", which represent outcomes such as pass/fail, win/lose, alive/dead or healthy/sick

The Application of logistic regression

- First, look for risk factorsto identify the risk factors for a disease.
- second, prediction, if we have established the logistic regression model, we can predict in the case of different independent variables, the probability of a disease or a certain situation.
- Third, discrimination, similar to prediction, according to the logistic model, judge the probability of a person's situation belongs to a certain desease.

Interpretation of the logistic regression

- The test data is X（x_0, x_1, x_2...x_n）, Θ（θ_0, θ_1, θ_2...θ_n）is the parameter.
- Then Z= $\theta_0 x_0 + \theta_1 x_1$
  $Z = \theta_0 X_1 + \theta_1 X_1 + \theta_2 X_2 + \cdots + \theta_n X_n$
- Transfer Z into two-valued variable
- g(Z)=1/(1+e^(−z))