

(7) Logistic regression

STUDY QUESTIONS

1. Write down the definition of a generalized linear model.
2. Write down the standard logistic function and its inverse.
3. Sketch the standard logistic function and its inverse and label x- and y-axis.
4. Write down the definition of simple logistic regression as a generalized linear model.
5. Write down the definition of the simple logistic regression model.
6. Write down the gradient ascent algorithm for numerical maximum likelihood estimation of the logistic regression parameter vector.

EXERCISES

1. Create a training set of $n = 100$ training data points from a simple linear regression model and recover the simulation parameter.
2. Assess the impact of the gradient ascent learning rate parameter α on the quality of the logistic regression maximum likelihood parameter estimate.