Logistics Regression II

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Two objective functions are not consistent.

The logistic regression loss function for two classification function is

$$J(\theta) = -\frac{1}{m}\sum_{i=1}^{m}[y^{(i)}\log(\hat{p}^{(i)}) + (1-y^{(i)})\log(1-\hat{p}^{(i)})],$$

where

$$\hat{p}^{(i)} = \sigma(\theta^{\intercal}x^{(i)}) = \frac{1}{1+\exp(-\theta^{\intercal}x^{i})}.$$

The logistic regression objective function we considered before is

$$f(x) = \frac{1}{n}\sum_{i=1}^{n}[\log(1+\exp(x^{\intercal}A_{i*})) - b_i x^{\intercal}A_{i*}]$$