Logistic regression hypothesis is deﬁned as: , where function h is the sigmoid function:

The derivative of hypothesis sigmoid function is:

Regularized cost function in logistic regression is:

Note that you should not regularize the parameter ; thus, the ﬁnal summation above is for j = 1 to n, not from j = 0 to n. The gradient of the cost function is a vector where the j-th element is deﬁned as follows:

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