

Regularized Logistic Regression

Prevent Overfitting with Penalty Terms

L2 (Ridge)

$$\text{Loss} + \lambda \sum w_i^2$$

Smooth coefficient shrinkage

L1 (Lasso)

$$\text{Loss} + \lambda \sum |w_i|$$

Feature selection

Elastic Net

$$L1 + L2$$

Combines L1 and L2 penalties



Hyperparameter λ : Controls regularization strength



Especially important with **high-dimensional data**

Choosing λ :

Cross-validation to choose optimal λ