Fisher scoring

Recap: Fisher information

Properties

Theorem: Under appropriate regularity conditions,

$$\mathbb{E}[U(\theta) \mid \theta] = 0$$

Properties

Theorem: Under appropriate regularity conditions,

$$\mathcal{I}(\theta) = -\mathbb{E}\left[\frac{\partial^2}{\partial\theta^2}\ell(\theta|\mathbf{Y}) \,\middle|\, \theta\right]$$

Fisher information vs. Hessian

Fisher scoring

IRLS for logistic regression

A preview of Fisher information properties