$f : \mathbb{R}^m \to \mathbb{R}^n$
$J \in R^{n \times m}$
$J_{i,j} = \frac{\partial f(x)_i}{\partial x_j}$
$H(f)(x)_{i,j} = \frac{\partial^2}{\partial x_i \partial x_j} f(x)$
$H_{i,j} = H_{j,i}$
$\hat{g} = \frac{1}{m} \nabla_\theta \sum_{i=0}^{m} L(f(x^i; \theta), y^i)$
$\hat{y}^i$
$f : R^m \to R$