Machine Learning

Gradient de l'erreur

Gradient et mise à jour

$$y = a.x + b$$

$$E_{\Omega} = \frac{1}{2n} \sum_{i=[1..n]} (y_i^* - y_i)^2$$

$$E_{\Omega} = \frac{1}{2n} \sum_{i=[1..n]} (y_i^* - (a.x_i + b))^2$$

...

$$\begin{array}{l} \frac{\partial E_{\Omega}}{\partial a} = \frac{1}{n} \sum_{i=[1..n]} (a.x_i + b - y_i^*).x \\ \frac{\partial E_{\Omega}}{\partial b} = \frac{1}{n} \sum_{i=[1..n]} (a.x_i + b - y_i^*) \end{array}$$

 $U^{2'}=2U'*U$

M.A.J:

$$\begin{aligned} a &\leftarrow a - \gamma. \frac{\partial E_{\Omega}}{\partial a} \\ b &\leftarrow b - \gamma. \frac{\partial E_{\Omega}}{\partial b} \end{aligned}$$

où $1>\gamma>0$ (learning rate)