

Machine Learning

Gradient de l'erreur

$$y = a.x + b$$

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

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

...

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

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

$$U'^2 = 2U' * U$$

M.A.J :

$$a \leftarrow a - \gamma \cdot \frac{\partial E_{\Omega}}{\partial a}$$

$$b \leftarrow b - \gamma \cdot \frac{\partial E_{\Omega}}{\partial b}$$

où $1 > \gamma > 0$ (learning rate)