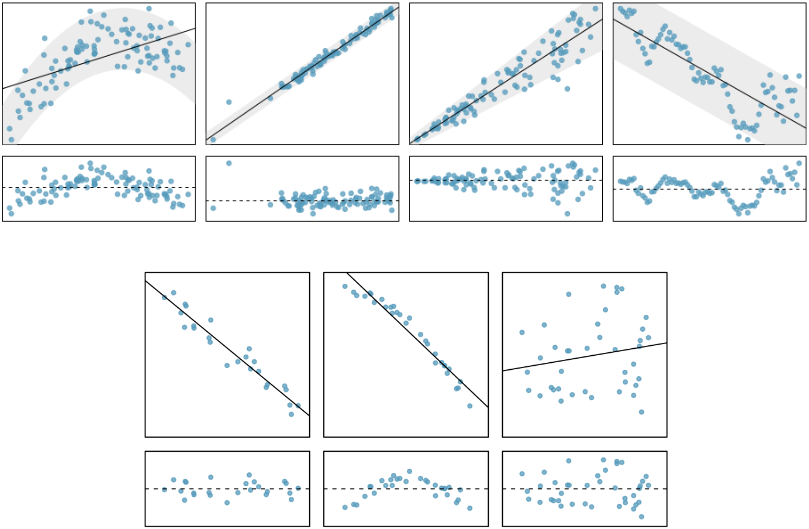
Machine Learning

Régression Polynomiale

Regression Polynomiale

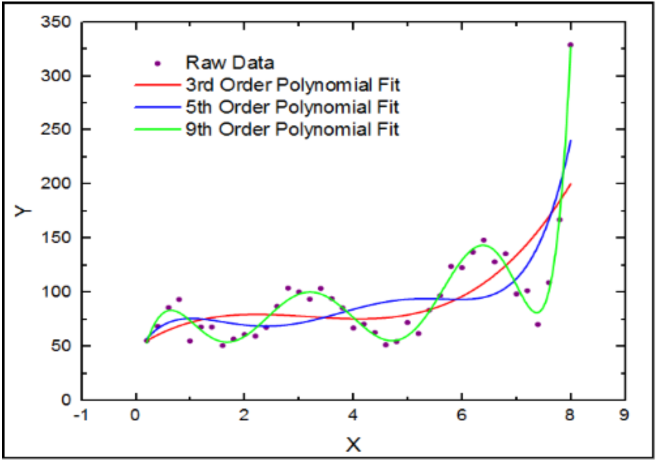
Limites de la regression linéaire



Régression Polynomiale

$$Y = a_0 + a_1 * X + a_2 * X^2 + a_3 * X^3 + ... + a_n * X^n$$

$$Y = \sum_{k \in [0..n]} a_k * X^k$$



Gradient et mise à jour

$$Y = \sum_{k \in [0..n]} a_k * X^k$$

$$E_\Omega = \frac{1}{2n} \sum_{i=[1..n]} (\hat{Y}_i - Y_i)^2$$

$$\frac{\partial E_\Omega}{\partial a_k} = \frac{1}{n} \sum_{i=[1..n]} (Y_i - \hat{Y}_i).X^k$$

M.A.J :

$a_k \leftarrow a_k - \gamma.\frac{\partial E_\Omega}{\partial a_k}$

où $1 > \gamma > 0$ (learning rate)