$$\gamma_{min} = \frac{\partial}{\partial \gamma} J(\gamma)$$

FUNZIONE COSTO (RMSE): $\frac{1}{|R|} \sqrt{\sum_{(x,i) \in R} \left(\sum_{e=1}^{m} \gamma_{x,e} * v_{x,e} * a_{e,i} - r_{x,i} \right)^2}$

$$\frac{\partial}{\partial \gamma_j} J(\gamma) = \frac{\partial}{\partial \gamma_j} * \frac{1}{|R|} \sqrt{\sum_{(x,i) \in R} \left(\sum_{e=1}^{m} \gamma_{x,e} * v_{x,e} * a_{e,i} - r_{x,i} \right)^2}$$

ADESSO BISOGNA SVOLGERE LA DERIVATA:

$$\frac{\partial}{\partial \gamma_j} J(\gamma) = \frac{1}{|R|} \frac{\sum_{(x,i) \in R} \left(\sum_{e=1}^{m} \gamma_{x,e} * v_{x,e} * a_{e,i} - r_{x,i} \right)}{\sqrt{\sum_{(x,i) \in R} \left(\sum_{e=1}^{m} \gamma_{x,e} * v_{x,e} * a_{e,i} - r_{x,i} \right)^2}} \sum v_{x,e} \cdot a_{e,i}$$

ADESSO BISOGNA RIPETERE FINO A CONVERGENZA

$$\gamma_j = \gamma_j - \alpha \frac{\partial}{\partial \gamma_j} J(\gamma) \quad \text{per } j = 0, \ldots, m$$