$$\log\left[\frac{1}{Z^m}\cdot\prod_{i=1}^{m}\cdot\exp\left(-\frac{(y^{(i)}-w^T x^{(i)})^2}{2\sigma^2}\right)\right]$$

$$= \left[m\log\frac{1}{Z} + \sum_{i=1}^{m}\log\exp\left(-\frac{(y^{(i)}-w^T x^{(i)})^2}{2\sigma^2}\right)\right]$$

w

non dipende da w

$\Longleftrightarrow$ $\underset{w}{\text{minimize}} \left[\sum_{i=1}^{m} \frac{(y^{(i)} - w^T x^{(i)})^2}{2\sigma^2} \right]$

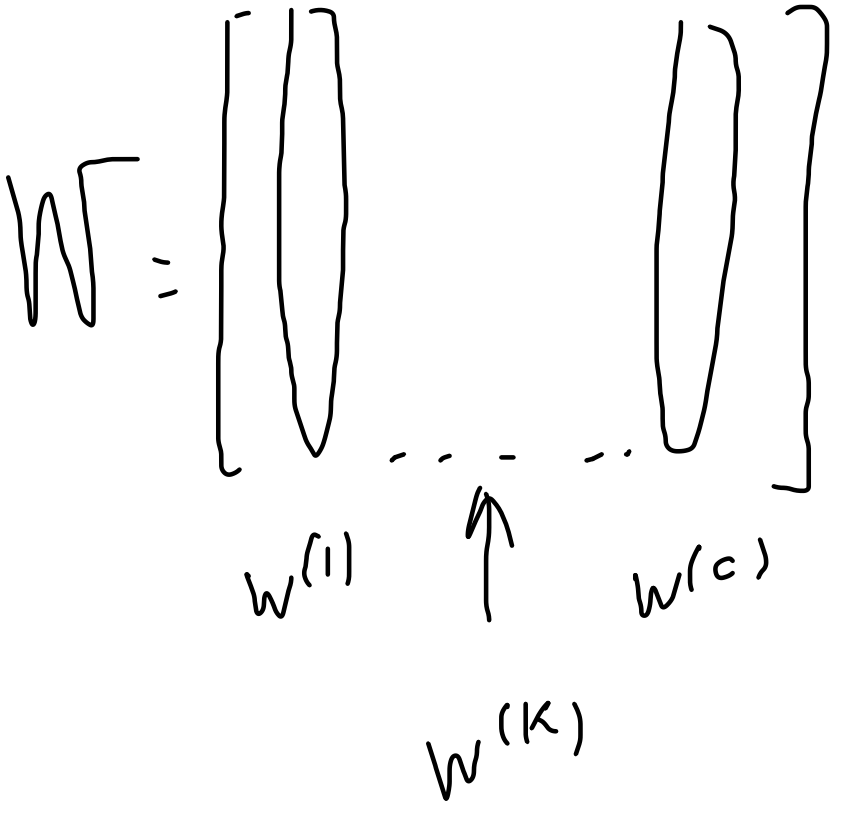
$\Longleftrightarrow$ $\text{minimize} \sum_{i=1}^{m} (y^{(i)} - w^T x^{(i)})^2$

Equivalente alla formulazione dei minimi quadrati

$$\underbrace{\left(h(x^{(1)}) - y^{(1)}\right)^2 + \left(h(x^{(1)}) - y^{(1)}\right)^2 + \ldots + \left(h(x^{(1)}) - (y^{(1)})\right)^2 +}_{\beta_1}$$

$$+ \underbrace{\left(h(x^{(2)}) - y^{(2)}\right)^2 + \ldots - - - -}_{\beta_2}$$

$$+ \ldots$$


W =
w(1)
w(K)
w(C)