









\[j(\theta )=\frac{1}{2m}{{\sum\limits\_{i=1}^{m}{({{\theta }\_{0}}+{{\theta }\_{{{x}\_{i}}}}-{{y}\_{i}})}}^{2}}+\frac{\lambda }{2}\sum\limits\_{\text{i}=1}^{\text{n}}{\left\| \theta \right\|\_{2}^{2}}=\frac{1}{2}MSE(\theta )+\frac{\lambda }{2}\sum\limits\_{i=1}^{n}{{{({{\theta }\_{i}})}^{2}}}\]