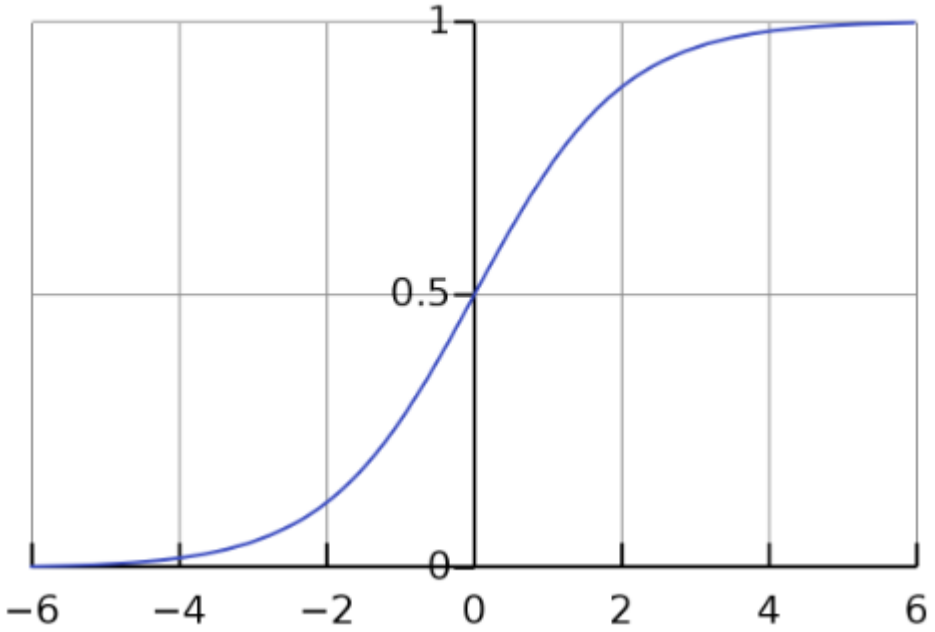
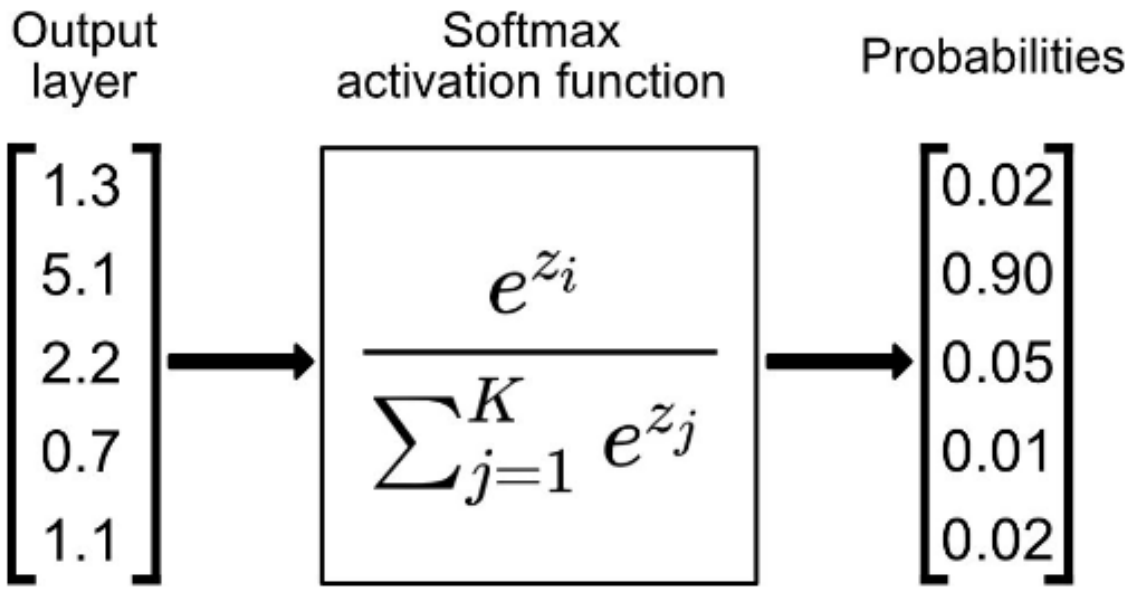
2주차 발표

송성근

Softmax

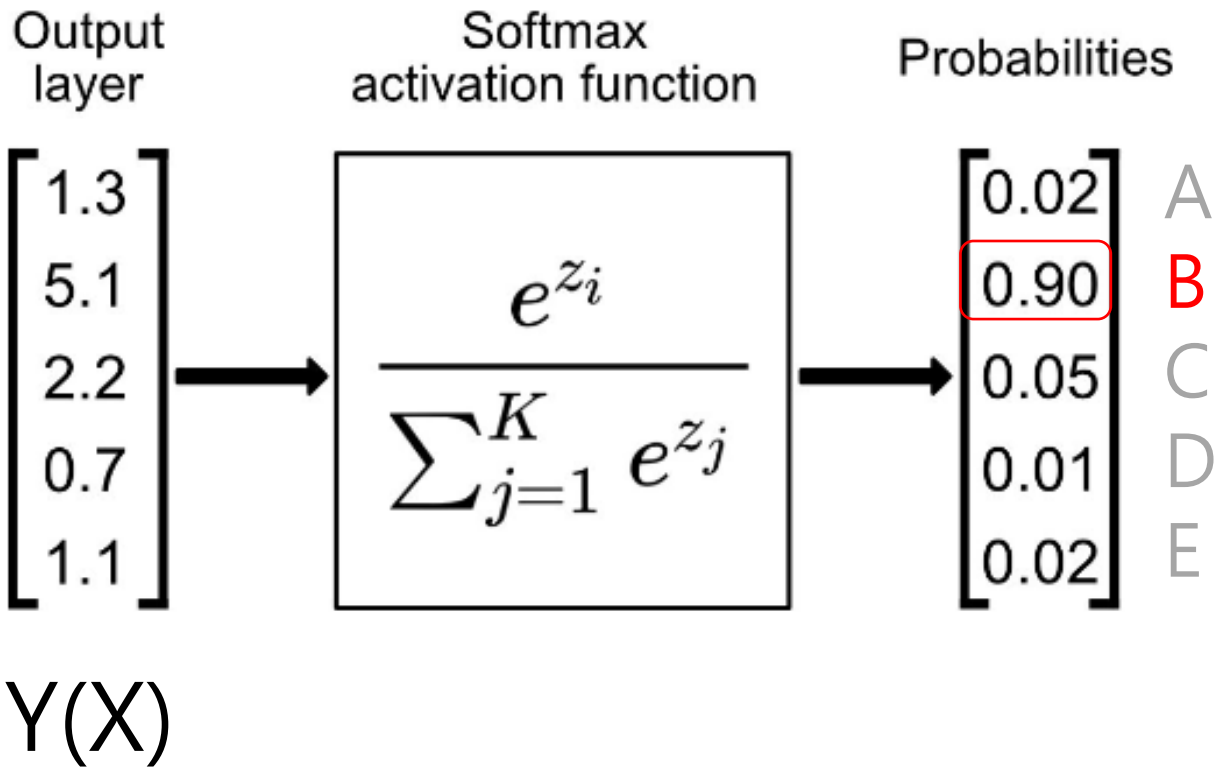


sigmoid



softmax

Multinomial Classification



Y(X)

Cross Entropy

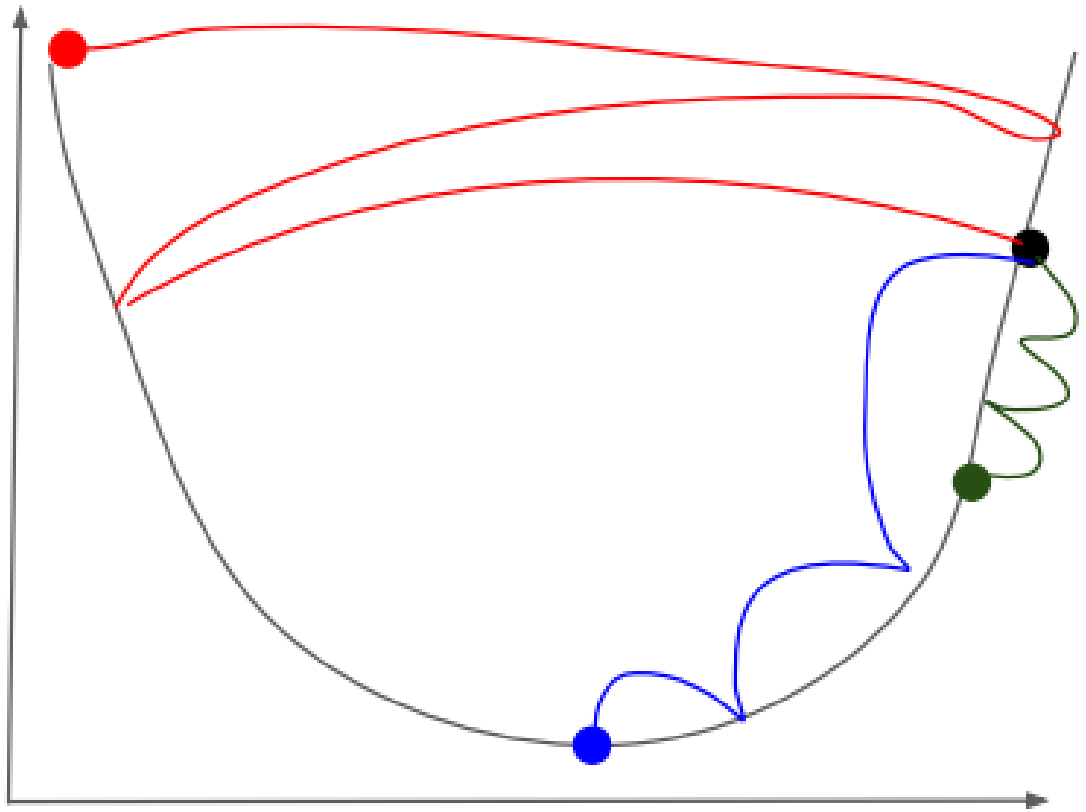
$$H(P^* \mid P) = -\sum_i \underbrace{P^*(i)}_{\text{TRUE CLASS DISTIRBUTION}} \log \underbrace{P(i)}_{\text{PREDICTED CLASS DISTIRBUTION}}$$

Probabilities

0	0.02	A
1	0.90	B
0	0.05	C
0	0.01	D
0	0.02	E

$\longrightarrow \quad -log0.9$

Learning Rate



a: 10

a: 0.01

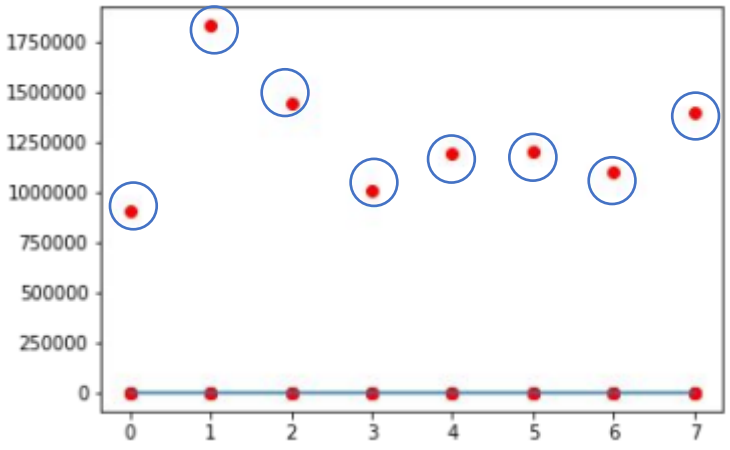
a: 0.0001

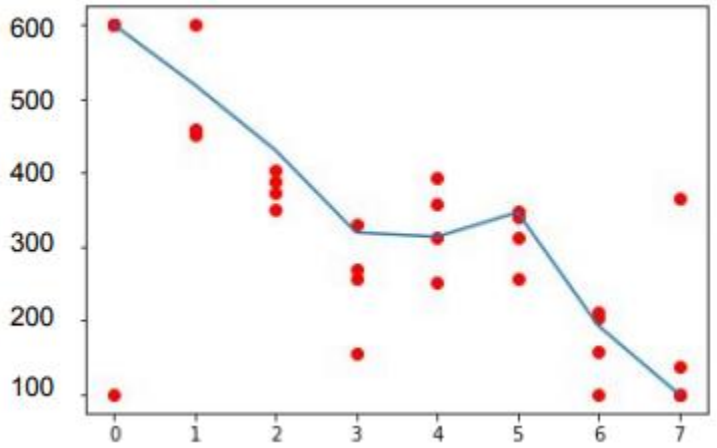
Data preprocessing

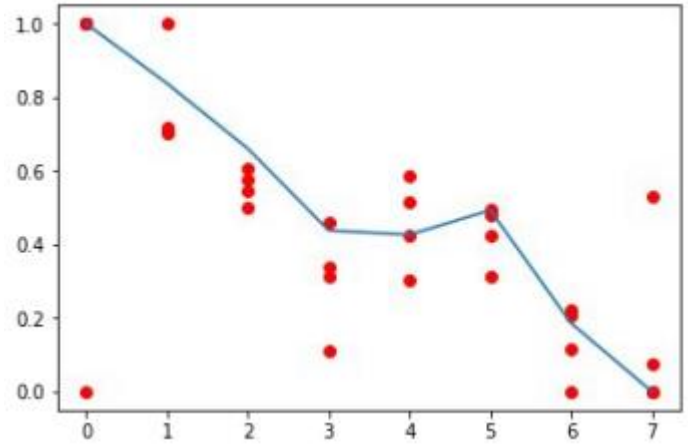
Denoising

Scaling

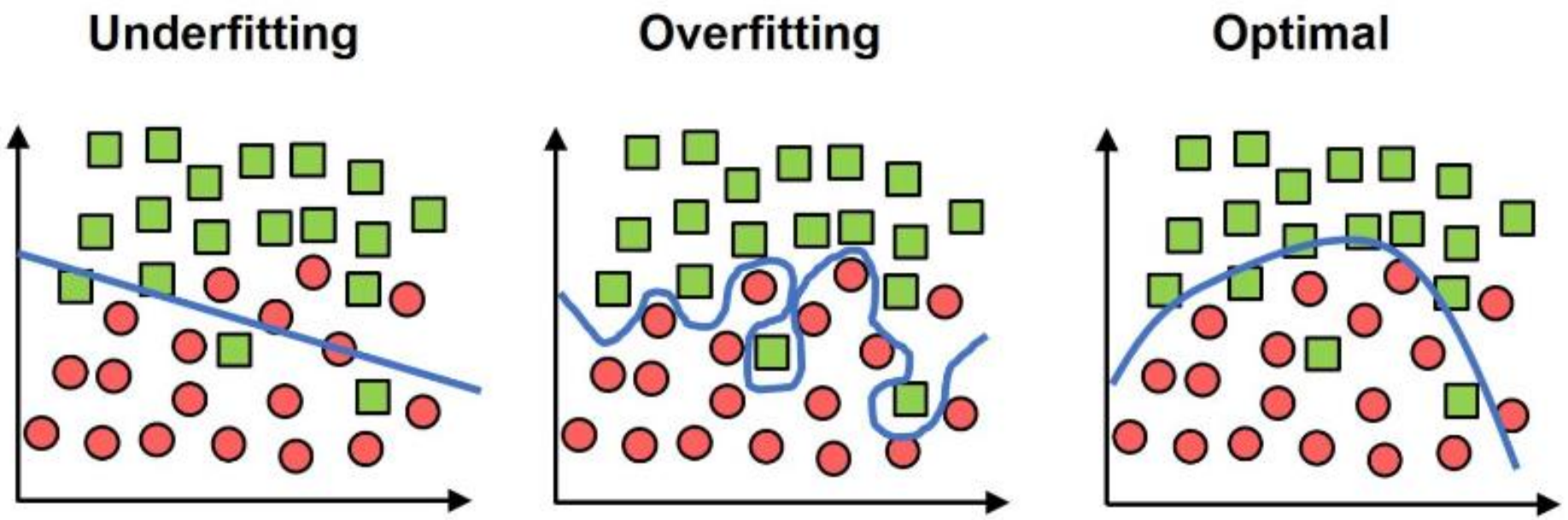
outliers



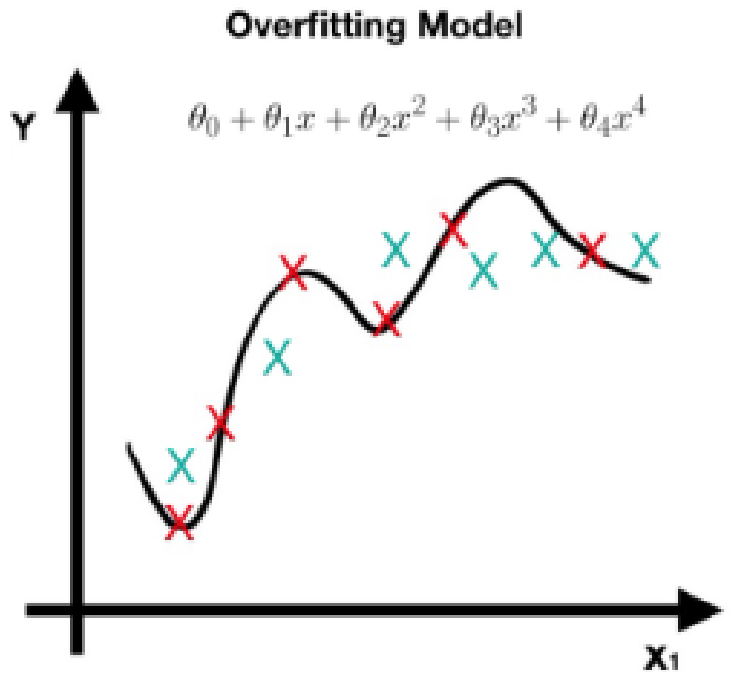




Overfitting



Regularization



Regularization Term

$$J(\theta) = \frac{1}{2m}\sum_{i=1}^{m}\left(h_\theta(x^{(i)}) - y^{(i)}\right)^2 + \boxed{1000{\theta_3}^2 + 1000{\theta_4}^2}$$

$$\min_{\theta} J(\theta), \text{ getting } \theta_3 \approx 0,\ \theta_4 \approx 0$$