

04/15 (토)

15:00 - 17:00 (평상X)

신공학과 3107호

closed book,

계산기 X.

cheat sheet A4 1장.

화

↓

평상!

$$y = \theta_0 + \theta_1 x_1 + \theta_2 x_2$$

$$\theta = [1 \quad 1 \quad 2]^T$$

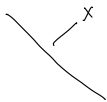
	x_0	x_1	x_2	$\hat{y}$	$-y$	$(\hat{y}-y)$
1	1	1	2	6	6	0
2	1	1	3	8	7	1
3	1	2	4	11	11	0
4	1	2	5	13	13	0
5	1	3	6	16	14	2

$$\theta = \theta - 2\eta \sum_{n=1}^5 (\hat{y}_n - y_n) x_n = \theta - 0.02 \cdot \left(1 \cdot \begin{bmatrix} 1 \\ 1 \\ 2 \end{bmatrix} + 2 \cdot \begin{bmatrix} 1 \\ 1 \\ 3 \end{bmatrix} \right)$$

$$\max \frac{1}{\|w\|} = 1$$

$$\text{s.t.} \quad t_n(w^T x_n + w_0) \geq \underline{1}$$

$$g(x) = \underline{x_1 + x_2 + 1}$$



$$\frac{|x_1 + x_2 + 1|}{\sqrt{2}}$$

$$g(x) = 2x_1 + 2x_2 + 2$$

$$\frac{|2x_1 + 2x_2 + 2|}{2\sqrt{2}}$$

$$y(x) = \sigma(\theta^T x) = p(C_1 | x)$$

	<u>$\sigma(\theta^T x)$</u>	t	
<u>x_1</u>	0.7	C_1 (C_1)	<u>0.7</u> ↑
<u>x_2</u>	<u>0.3</u>	C_2 (C_1)	<u>0.3</u> ↑
<u>x_3</u>	<u>0.4</u>	C_2 (C_2)	<u>0.6</u> ↑
<u>x_4</u>	0.6	C_1 (C_2)	<u>0.4</u> ↑
<u>x_5</u>	<u>0.1</u>	C_2 C_1	<u>0.1</u> ↑
	<u><u>$p(C_1 x)$</u></u>		

$\text{Sign}(\Theta^T x)$		t_n
x_1	+1	+1
x_2	-1	+1
x_3	+1	-1
x_4	-1	-1
x_5	+1	-1

$$\begin{aligned}\Theta &= \Theta + \eta x_n t_n \\ &= \Theta + \eta \begin{bmatrix} 1 \\ x_2 \\ 1 \end{bmatrix} \cdot (+1)\end{aligned}$$

$$\Theta = [1 \ 1 \ 1]^T$$

$$x_2 = [2 \ 2 \ 3]^T$$

$$\eta = 0,1$$

$$\begin{bmatrix} 1 \\ 1 \\ 1 \end{bmatrix} + 0,1 \begin{bmatrix} 2 \\ 2 \\ 3 \end{bmatrix} = \begin{bmatrix} 1,2 \\ 1,2 \\ 1,3 \end{bmatrix}$$

$$\mu_k = \frac{1}{N_k} \sum_{\mathbf{c}_k} x_n$$

$$\mu_k = \frac{1}{N_k} \sum \gamma_{nk} x_n$$

$$\Theta = \Theta \left\{ \eta \nabla J(\theta) \right\}$$

