Assignment-9 18K41A04F7

Step1 :- $x = [0.2, 0.4, 0.6, 0.8, 1.0, 1.2]$

$y = [3.4, 3.6, 4.2, 4.6, 5.0, 5.4]$

$m = 1$, $c = -1$, learning rate $= 0.01$

batch size $= 2$, $V\_m = 0$, $V\_c = 0$

momentum coef $= 0.9$

Step2 :- Batch ①

$$\text{grad } m = -(y_1 - mx_1 - c)x_1 + (y_2 - mx_2 - c)x_2$$

$$= -1.3$$

$$\text{grad } c = -(y_1 - mx_1 - c) + (y_2 - mx_1 - c]$$

$$= -4.3$$

Step3 :- delta m $= 0.01300$

delta c $= 0.043$

Step4 :- $Vm = Vm * \text{momentum coef} * \text{delta m}$

$= 0.01300$

$V\_c = V\_c * \text{momentum coef} * \text{delta c}$

$= 0.043$

Step5 :- $m = m + Vm = 1.013$

$c = c + Vc = -0.957$

Step6 :- Batch = 1+1 = 2

Step7 :- grad m = -3.2634
grad c = -4.6479

Step8 :- delta m = 0.032633
delta c = 0.0616479

Step9 :- Vm = 0.044334
Vc = 0.05179

Step10 :- m = m + Vm = 1.057334
c = c + Vc = -0.871821