

Thursday Jan 23, 2025

In-class Handout

COSC 410A Applied Machine Learning

Prof. Forrest Davis

Name:

Discuss and complete the following questions with the person nearest you. You **may** be asked to share your thoughts with the class.

1. Using mean absolute error, determine the loss when

- $\mathbf{X} = \begin{pmatrix} 6 & 2 & 3 & 1 & 1 \\ 4 & 7 & 0 & 9 & 1 \\ 2 & 3 & 1 & 6 & 1 \end{pmatrix}$

- $\mathbf{w} = \begin{bmatrix} 2 \\ 1 \\ 1 \\ 1 \\ 2 \end{bmatrix}$

- $\mathbf{y} = \begin{bmatrix} 22 \\ 20 \\ 17 \end{bmatrix}$

2. Calculate one update step to the parameters of a linear regression model using gradient descent. Assume the following:

- The initial parameters are -2 for w_1 and 10 for b
- Your data is one point, 2 , with the label 9
- The learning rate is 0.5