CSE428: Image Processing

Quiz 2 (Fall 23)
Time: 25 minutes

Question

Suppose you have a database, stored as a csv file, on which you want to perform a supervised learning algorithm. The first 3 rows of the dataset are shown below. The last column (y) is the target.

x1	x2	x3	y
10	124	-139	0
5	398	-112	1
3	312	-172	0

a. Suppose you are using logistic regression to predict **y** given **x1**, **x2**, and **x3**. Derive the hypothesis function and the cost function. **[6]**

b. Among the following two sets of parameters, which one is the "better" model? Why? **[4]**

$$i)\ \theta = [\theta_0,\ \theta_1,\ \theta_2,\ \theta_3] = [0,\ 0.1,\ 0.008, 0.001]$$

$$ii)\ \theta = [\theta_0,\ \theta_1,\ \theta_2,\ \theta_3] = [0,\ 0.5,\ 0.008, 0.002]$$