

CS 551 Statistical pattern recognition and learning

Exercise 8: Regression

QUESTION 1

You are given the following data. Apply linear regression and find the error rate of your predictions. Which measure will you use?

x_1	x_2	x_3	target
5	1	1	1
4	1	11	2
2	3	2	3
1	1	9	2
1	0	0	1
5	1	2	0

QUESTION 2

Repeat the above for 2 variables with polynomial regression of degree 2 and degree 3.

QUESTION 3

x_1	x_2	x_3	x_4	x_5	target
5	1	1	2	2	1
4	3	0	2	1	2
2	2	2	1	2	3

Apply kernel ridge regression to the above data in instance space. You can use Matlab for determining inverse for matrices. The value of ridge can be set to 1. You have to use, linear, polynomial degree 2 and RBF kernels.