Assignment 1

Machine Learning Lab

Regression

Q1

Refer to any 5 regression problems publicly available at https://sci2s.ugr.es/keel/category.php?cat=reg

Find RMSE, MAE and coefficient of determination using following approaches.

1. Linear regression
2. Regression order 2 and 3
3. Regression with Ridge Regularization

Compare your results with any 3 recently published research articles.

Note: Tune the regularization parameter on the range :2^{-18}, 2^{-16}...2^{50}

Q2

Write a program to solve the following regression problem using gradient descent method.

Y	3	4	5	7	5
X	1	2	3	4	5

Find RMSE, MAE and coefficient of determination. Also study the impact of ridge regularization.

Q3