Assignment 5

1. Consider the motorcycle dataset. Estimate a regularized least square kernel regression model with Gaussian(RBF) kernel given by

$$K(x, y) = e^{\frac{-||x-y||^2}{2\sigma}}$$

Tune the parameter λ and kernel parameter σ and the plot of optimal estimated functions along with data points. Also obtain the RMSE, MAE, NMSE and R^2 for evaluating the quality of fit.

2. Consider the Boston Housing dataset (545×14). Train the LASSO linear regression model with sub gradient descent method by tuning its parameters. Obtain the Also obtain the RMSE, MAE, NMSE and R^2 for evaluating the quality of fit. Also obtain the sparsity of the decision variables.