



MALAVIYA NATIONAL INSTITUTE OF TECHNOLOGY, JAIPUR

Department of Computer Science and Engineering

Assignment—5

Note:

(1) All the problems are to be implemented in Python. The exercises are to be done individually.

1. (20 points) Logistic regression can also be augmented with the l_2 -norm regularization:

$$\min E(w) + \lambda \|W\|^2, w$$

where $E(w)$ is the logistic loss. Please change your gradient descent algorithm accordingly and use cross-validation to determine the best regularization parameter.

- (10 points) Plot the training and testing performance curves.
- (10 points) Indicate in the plot the best regularization parameter you obtained (using cross validation).