MACHINE LEARNING

LAB ASSIGNMENT – 4 (Part-1)

Topics Covered: Support Vector Machines (SVM)

Dated: 12.11.2021

Problem 1: Consider an **Iris Dataset** having 4 features of iris flower and one target class. The 4 features are: *SepalLengthCm*; *SepalWidthCm*; *PetalLengthCm* and *PetalWidthCm*. The target class is the type of the flower species and it has 3 types: *Setosa; Versicolor; Virginica*.

Import the Iris Dataset from Scikit-Learn. Model and Train a **SVM classifier** using the following iris features and use the trained model to predict the Iris species type.

- Consider sepal features. Model and visualize the SVM classifier using different kernels: *linear; sigmoid; rbf* and *poly* with degree 3. Also find out the classification accuracy in each case.
- Consider petal features. Model and visualize the SVM classifier using different kernels: *linear; sigmoid; rbf* and *poly* with degree 3. Also find out the classification accuracy in each case.

Problem 2: Use the breast cancer dataset (shared earlier) and predict whether the tumour is benign or malignant.