**Support Vector Machines**

Follow the link <http://scikit-learn.org/stable/modules/svm.html> to learn about svc

1. Following is a simple python code that uses inbuilt function for classification using the concept of Support vector Machine

# Support Vector Machine

from sklearn import datasets

from sklearn import metrics

from sklearn.svm import SVC

# load the iris datasets

dataset = datasets.load\_iris()

# fit a SVM model to the data

model = SVC()

model.fit(dataset.data, dataset.target)

print(model)

# make predictions

expected = dataset.target

predicted = model.predict(dataset.data)

# summarize the fit of the model

print(metrics.classification\_report(expected, predicted))

print(metrics.confusion\_matrix(expected, predicted))

Use the following datasets and check the accuracy.

1. Australian dataset
2. Breast-cancer

You may get these datasets from following link.

<https://www.csie.ntu.edu.tw/~cjlin/libsvmtools/datasets/binary.html#australian>

<https://archive.ics.uci.edu/ml/datasets/Breast+Cancer+Wisconsin+(Diagnostic)>

1. In SVC function you may change the parameter C and plot the accuracy for different values of C with a kernel function radial basis function (inbuilt).
2. Does the accuracy change if the kernel function changes ?