support vector machine

# example code

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| import numpy as np  import matplotlib.pyplot as plt  from sklearn import svm  from sklearn.datasets import make\_blobs  X, y = make\_blobs(n\_samples=40, centers=2, random\_state=20)  # 선형분류  clf = svm.SVC(kernel='linear')  clf.fit(X, y)  newData = [[3,4]]  print(clf.predict(newData))  # 샘플 데이터 표현  plt.scatter(X[:,0], X[:,1], c=y, s=30, cmap=plt.cm.Paired)  # 초평면(Hyper-Plane) 표현  ax = plt.gca()  xlim = ax.get\_xlim()  ylim = ax.get\_ylim()  xx = np.linspace(xlim[0], xlim[1], 30)  yy = np.linspace(ylim[0], ylim[1], 30)  YY, XX = np.meshgrid(yy, xx)  xy = np.vstack([XX.ravel(), YY.ravel()]).T  Z = clf.decision\_function(xy).reshape(XX.shape)  ax.contour(XX, YY, Z, colors='k', levels=[-1,0,1], alpha=0.5, linestyles=['--', '-', '--'])  # 지지벡터(Support Vector) 표현  ax.scatter(clf.support\_vectors\_[:,0], clf.support\_vectors\_[:,1], s=60, facecolors='r')  plt.show() |

# testing result

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