**Lab. Tutorial Module 4**

**In [11]**

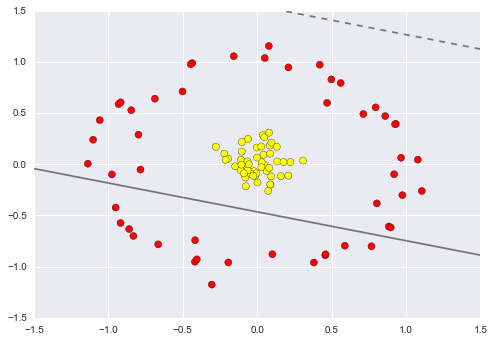
from sklearn.datasets.samples\_generator import make\_circles

X, y = make\_circles(100, factor=.1, noise=.1)

clf = SVC(kernel='linear').fit(X, y)

plt.scatter(X[:, 0], X[:, 1], c=y, s=50, cmap='autumn')

plot\_svc\_decision\_function(clf, plot\_support=False);



**In [12]**

r = np.exp(-(X \*\* 2).sum(1))

**In [13]**

from mpl\_toolkits import mplot3d

def plot\_3D(elev=30, azim=30, X=X, y=y):

ax = plt.subplot(projection='3d')

ax.scatter3D(X[:, 0], X[:, 1], r, c=y, s=50, cmap='autumn')

ax.view\_init(elev=elev, azim=azim)

ax.set\_xlabel('x')

ax.set\_ylabel('y')

ax.set\_zlabel('r')

interact(plot\_3D, elev=[-90, 90], azip=(-180, 180),

X=fixed(X), y=fixed(y));

