

Practical PCA and TSNE

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```
✓ [1] import numpy as np
1s from sklearn import datasets
from sklearn.decomposition import PCA
from sklearn.manifold import TSNE
import matplotlib.pyplot as plt
```

```
✓ [8] # Load Iris dataset
0s data, target = datasets.load_iris(return_X_y=True)
```

```
✓ [9] X = data.copy()
0s y = target.copy()
```

▼ PCA

```
✓ [10] pca = PCA(n_components=2, whiten=True)
0s X_pca = pca.fit_transform(X)
X_pca.shape

(150, 2)
```

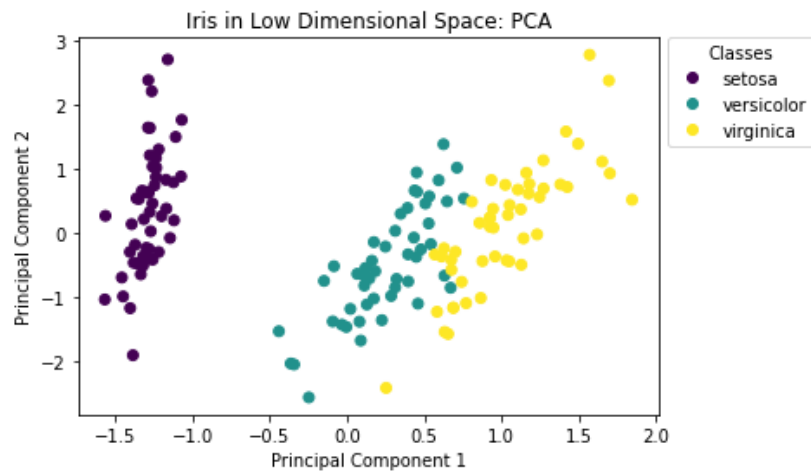
```
✓ [11] fig = plt.scatter(x=X_pca[:,0], y=X_pca[:,1], c=y)
0s

plt.xlabel('Principal Component 1')
plt.ylabel('Principal Component 2')
plt.title('Iris in Low Dimensional Space: PCA')

legends = (fig.legend_elements()[0], ['setosa', 'versicolor', 'virginica'])
plt.legend(*legends,
           bbox_to_anchor=(1, 1.025),
           title="Classes")

plt.plot()
```

✓ [11] []



▼ TSNE

✓ [12] tsne = TSNE(n_components=2, perplexity=100, init='pca')
0s X_tsne = tsne.fit_transform(X)
X_tsne.shape

(150, 2)

✓ [13] fig = plt.scatter(x=X_tsne[:,0], y=X_tsne[:,1], c=y)
1s

plt.xlabel('Embedding 1')
plt.ylabel('Embedding 2')
plt.title('Iris in Low Dimensional Space: TSNE')

legends = (fig.legend_elements()[0], ['setosa', 'versicolor', 'virginica'])
plt.legend(*legends,
bbox_to_anchor=(1, 1.025),
title="Classes")

plt.plot()

✓ [13] []

