

problem_4

May 24, 2017

```
In [1]: import numpy as np
        from sklearn.decomposition import PCA
```

```
x = np.array([[1, 0, 0, 2, -1],
              [1, -1, 2, 0, -1],
              [0, 1, 0, 2, 1],
              [0, 1, 1, 0, 0],
              [0, 2, 1, 1, 2],
              [0, -2, 2, 1, 1],
              [0, 1, 0, 0, 1],
              [2, 2, 1, 1, 0],
              [2, -2, 1, 0, 0],
              [1, 1, 1, 2, 1]])

x.shape
```

```
Out[1]: (10, 5)
```

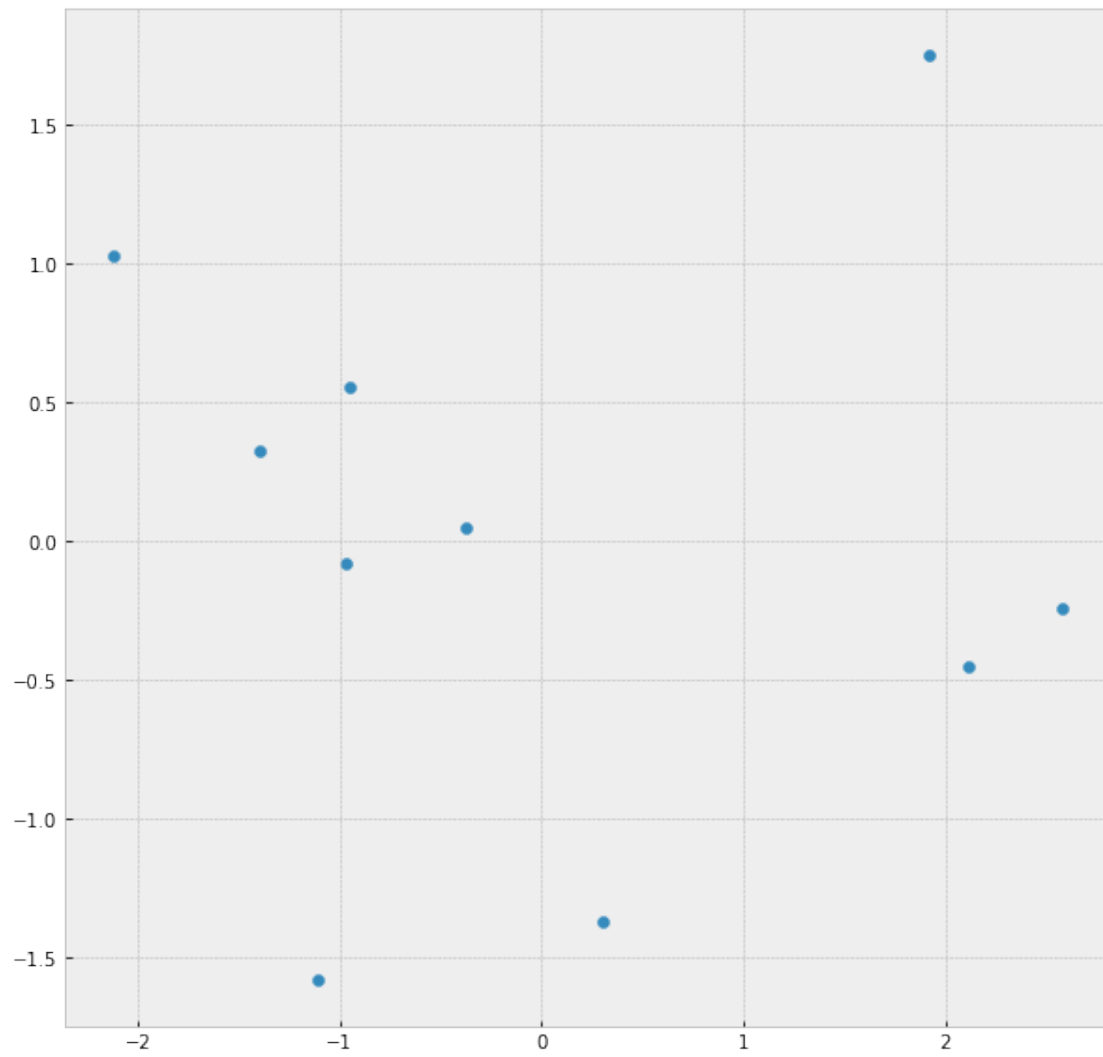
```
In [2]: from sklearn.decomposition import PCA
```

```
pca = PCA(n_components=2)
y = pca.fit_transform(x)
y.shape
```

```
Out[2]: (10, 2)
```

```
In [3]: import matplotlib.pyplot as plt
        import matplotlib
```

```
matplotlib.style.use('bmh')
matplotlib.rcParams['figure.figsize']=(10,10)
plt.scatter(y[:,0], y[:,1])
plt.show()
```



In []: