(also known as principal component analysis)

Exercises 11.1

- The last method of analyzing data based on eigenvalue/vectors of covariance matrices can be applied to any type of data; let's consider a set of images here
- First, download the 'att_faces.zip' file with a set of face images from CAPS11 material section in Google Classroom and extract it into 'att_faces' folder.
- Second, copy the script 'load_faces.m' in 'CAPS11files.zip', also downloaded from the material section in Google Classroom. Make sure the 'load_faces.m' script and 'att_faces' folder are in the same directory.
- Using this script, load 400 face images (92x112 pixels) to X, a 400x10304(=92x112) matrix, by typing

```
>> load_faces
```

```
>> imshow(reshape(X(100,:),[112,92])/255)
```

'/255' may not be necessary depending on your system

`reshape` reshapes a vector into a matrix of 92x112, which is treated as an image

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