

Project3---The final project

Brief and requirement

- Project materials including writeup template **homework3.zip**.
- Required files: README(project-template), code, data
- The report is written in Chinese and submitted in printed papers.
- **In this exercise, you will implement the K-means clustering algorithm and apply it to compress an image. In the second part, you will use principal component analysis to find a low-dimensional representation of face images.**

Details about the Code

1. ex3.m - Matlab script for the first exercise on K-means
2. ex3_pca.m - Matlab script for the second exercise on PCA
3. displayData.m - Displays 2D data stored in a matrix
4. drawLine.m - Draws a line over an existing figure
5. plotDataPoints.m - Initialization for K-means centroids
6. plotProgresskMeans.m - Plots each step of K-means as it proceeds
7. runkMeans.m - Runs the K-means algorithm
8. [*] pca.m - Perform principal component analysis
9. [*] projectData.m - Projects a data set into a lower dimensional space
10. [*] recoverData.m - Recovers the original data from the projection
11. [*] findClosestCentroids.m - Find closest centroids (used in K-means)
12. [*] computeCentroids.m - Compute centroid means (used in K-means)
13. [*] kMeansInitCentroids.m - Initialization for K-means centroids

[*] indicates files you will need to complete

Throughout the exercise, you will be using the scripts ex3.m and ex3_pca.m. These scripts set up the dataset for the problems and make calls to functions that you will write. You do not need to modify either of them. You are only required to modify functions in other files, by following the instructions in this assignment.

Data

ex3data1.mat - Example Dataset for PCA

ex3data2.mat - Example Dataset for K-means

template:

题目：

姓名 学号

1. 实现功能简介
2. 具体编写代码及结果展示以及代码功能描述
3. 小结（包括通过本内容的认识以及其他）