Data Mining: Assignment 3

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1   Principal Component Analysis

1.1

you can see picture 1-a-1.png,1-a-2.png,1-a-3.png,1-a-4.png,1-a-5.png
and code $hack_pca.m, pca.m$

1.2

1.2.1

you can see picture 1-b-(i)-1.png
and code $pca_exp1.m$

1.2.2

you can see code pca_exp1.m
and the error rates are as follow
PCA when choose K=8 , the test error rate =0.260000
PCA when choose K=16 , the test error rate =0.185000
PCA when choose K=32 , the test error rate =0.145000
PCA when choose K=64 , the test error rate =0.120000
PCA when choose K=128 , the test error rate =0.125000
LDA when choose K=8 , the test error rate =0.220000
LDA when choose K=16 , the test error rate =0.105000
LDA when choose K=32 , the test error rate =0.070000

1.2.3

you can see code pca_exp2.m
and the origin picture is 1-b-(iii)-original.png
and picture 1-b-(iii)-8.png , 1-b-(iii)-16.png , 1-b-(iii)-32.png ,1-b-(iii)-64.png , 1-b-(iii)-12.png

2 Course Feedback

2.1

I think the lectures are interesting , I like Clustering-Spectral

2.2

I think homework is really difficult and challenging, also practical. And I like HW4 , the amount is small ,haha . And I like you can provide code with other language like python

2.3

I think it's good

2.4

The lecturer is experienced and outstanding

2.5

TA is responsible and careful

2.6

Talk more about deep learning.