HW08: Unsupervised Learning Results for Yoshio Fujimoto

⚠ Correct answers are hidden.

Score for this attempt: **1** out of 6
Submitted Apr 11 at 2:08pm
This attempt took 38 minutes.

Incorrect

Question 1

0 / 1 pts

Which of the following are good applications of PCA?

- [x] visualizing high dimensional data in 2D or 3D
- [ ] generating new features to increase dimensionality of data
- [x] discovering hidden groups in data
- [x] scaling features in a D dimensional dataset
- [ ] reducing variance in a dataset
- [x] compressing examples to a more compact representations to speed up a learning algorithm

Incorrect

Question 2

0 / 1 pts

Suppose you are running PCA. Given a set of input vectors x in R^D, you have discovered K principal components u_1 to u_K. How can we compute the k-th feature value for x in the K-dimensional space defined by the principal components?

- (•) x_k
- ( ) $u_k^T x$
- ( ) $u_k^T x_k$

Let's walk through a PCA example step by step.

Consider 4 data points in a 2-d feature space: (-1,1), (0.5,-0.5), (1,1), (-0.5,0.5).

Question 3

1 / 1 pts

Is the data centered?

- ( ) Yes
- (•) No

What is the first principal component u_1 = (dim1,dim2)?

Give values of dim1 and dim2 below: (Round up to 4th decimal, and **assume dim1 > 0**)

Incorrect

Question 4

0 / 1 pts

dim1:

Incorrect

Question 5

0 / 1 pts

dim2:

Incorrect

Question 6

0 / 1 pts

If we project all points into the 1-d subspace defined by the second principal component, what is the variance of the project data? (round up to 4th decimal)

Quiz Score: 1 out of 6