



Bookmarks

▶ Machine Learning Course: Getting Started

▶ Week 1

▶ Week 2

▶ Week 3

▶ Week 4

▶ Week 5

▶ Week 6

▶ Week 7

▶ Week 8

▶ Week 9

▼ Week 10

Lecture 19  
Principal Component Analysis

Lecture 20 Markov Models, Ranking and Semi-supervised Classification Examples

### Week 10 Quiz

Quiz due Apr 11, 2017 05:00 IST

Week 10 > Week 10 Quiz > Week 10 Quiz

## Week 10 Quiz

Bookmark this page

### Multiple Choice

1/1 point (graded)

Principle component analysis projects data into a lower dimension by minimizing \_\_\_\_\_

☐ the dimensionality of the projection

☒ the sum of squared errors of the projection

☐ the absolut errors of the projection

☐ the total number of projections

Submit

You have used 1 of 1 attempt

### Checkboxes

1/1 point (graded)

Check all that apply: PCA can be done using \_\_\_\_

☒ an eigendecomposition

☐ unconstrained least squares minimization

☐ random projections

☒ the singular value decomposition



Submit

You have used 1 of 1 attempt

**Week 10  
Discussion  
Questions**

## Multiple Choice

1/1 point (graded)

True or False: The first principle component selects the direction of greatest variation in the data.

☒ TRUE ✓☐ FALSE

You have used 1 of 1 attempt

## Text Input

1/1 point (graded)

Probabilistic PCA introduces the \_\_\_\_\_ distribution to the PCA modeling framework.

 ✓

You have used 1 of 1 attempt

## Multiple Choice

1/1 point (graded)

True or False: Kernel PCA must project data into a lower dimensional space than that of the original data.

☐ TRUE☒ FALSE ✓

You have used 1 of 1 attempt

---

✓ Correct (1/1 point)

## Text Input

1/1 point (graded)

A second-order Markov chain uses the previous \_\_\_\_ observations when making a prediction of the next observation.



Submit

You have used 1 of 1 attempt

## Numerical Input

1/1 point (graded)

Enter the correct number: A 10x10 matrix can encode the transition probabilities of a \_\_\_\_-state Markov chain.



Submit

You have used 1 of 1 attempt

## Numerical Input

1/1 point (graded)

The stationary distribution of a Markov chain is related to which eigenvector? Enter the index of this vector.



Submit

You have used 1 of 1 attempt

## Multiple Choice

1/1 point (graded)

True or False: An iterative algorithm is required to find the maximum likelihood estimate of the transition matrix associated with an observed Markov chain.

☐ TRUE

☒ FALSE ✓

Submit

You have used 1 of 1 attempt

## Multiple Choice

1/1 point (graded)

True or False: In the context of the lecture discussion, a random walk on a graph containing absorbing states is guaranteed to eventually terminate at one of these absorbing states.

☒ TRUE ✓☐ FALSE

Submit

You have used 1 of 1 attempt

© All Rights Reserved



© 2012-2017 edX Inc. All rights reserved except where noted. EdX, Open edX and the edX and Open EdX logos are registered trademarks or trademarks of edX Inc.

POWERED BY  
OPENedX®