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Lecture 4: Principal Component Analysis and Neuroimaging

Quiz due Aug 08, 2016 at 23:00 UTC



Week 4 - Principal Component Analysis and Neuroimaging > Lab4 Quiz > Lab4 Quiz



Bookmark

Principal Component Vectors

(1/1 point)

Principal component vectors have length

- ☐ n -- the length of the dataset
- ☐ sqrt(n)
- ☒ d -- the number of features ✓
- ☐ k -- the number of principal components selected

Eigenvalues

(1/1 point)

The top k principal components correspond to the top k eigenvalues.

Lab4 - Neuroimaging**Analysis via PCA**

Lab due Aug 08, 2016 at 23:00
UTC

**Lab4 Quiz**

Quiz due Aug 08, 2016 at 23:00
UTC



☒ True

☐ False

Computation and Storage Complexity

(1/1 point)

The distributed PCA algorithm we implemented in the lab used:

☒ $O(d^2)$ local storage

☒ $O(d^3)$ local computation

☐ $O(d)$ local storage

☐ $O(d^2)$ local computation



Note: Make sure you select all of the correct options—there may be more than one!

Plotting Correlated Variables

(1/1 point)

In Visualization 1, what would the data look like if covariance equaled -1.0?

- ☐ A vertical line
- ☐ Similar to covariance of 0
- ☐ Similar to covariance of .9
- ☒ A diagonal line ✓

High Positive Covariance

(1/1 point)

In Visualization 1 when the covariance is .9, where are most of the points on the plot?

- ☐ lower-left and lower-right
- ☒ upper-right and lower-left ✓
- ☐ upper-left and lower-right

☐ upper-left and upper-right

PCA Function

(1/1 point)

When running the `pca` function what is the largest `k` we should use?

☐ 1

☐ `n` -- length of dataset

☒ `d` -- number of features ✓

Time Based Aggregation

(1/1 point)

In Visualization 9, does the resulting spatial map appear symmetric or asymmetric about the midline (horizontal line across the middle of the brain)?

☒ Symmetric ✓

☐ Asymmetric

Direction Based Aggregation

(1/1 point)

In Visualization 10, does the resulting spatial map appear symmetric or asymmetric about the midline (horizontal line across the middle of the brain)?

☐ Symmetric

☒ Asymmetric ✓

Survey: Lab4 Completion Time

(1/1 point)

How long did Lab FOUR take you to complete (in hours - decimals are OK)?

5 ✓

Answer: 0

5

Please click "Check" to save your answers.

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