

Unit 4 Unsupervised Learning (2

Lecture 16. Mixture Models; EM

Course > weeks)

4. Mixture Model - Observed Case

> algorithm

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4. Mixture Model - Observed Case Estimating the Parameters in the Observed Case





Video

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Observed Case: An Example Problem

4/4 points (graded)

Let K=2 and let $\begin{bmatrix} -1.2 & -0.8 \end{bmatrix}^T$, $\begin{bmatrix} -1 & -1.2 \end{bmatrix}^T$, $\begin{bmatrix} -0.8 & -1 \end{bmatrix}^T$ be three observed points in cluster 1 and $\begin{bmatrix} 1.2 & 0.8 \end{bmatrix}^T$, $\begin{bmatrix} 1 & 1.2 \end{bmatrix}^T$, $\begin{bmatrix} 0.8 & 1 \end{bmatrix}^T$ be three observed points in cluster 2.

What are the means of the two clusters?

$$\mu_{1,1} =$$

-1 **✓ Answer:** -1

 $\mu_{1,2} =$

-1 **Answer:** -1

 $\mu_{2,1} =$

1 **✓** Answer: 1

 $\mu_{2,2} =$

1 ✓ Answer: 1

Solution:

The means of the two clusters are computed as the average of the points in each cluster, which evaluate to $\begin{bmatrix} -1 & -1 \end{bmatrix}^T$ and $\begin{bmatrix} 1 & 1 \end{bmatrix}^T$.

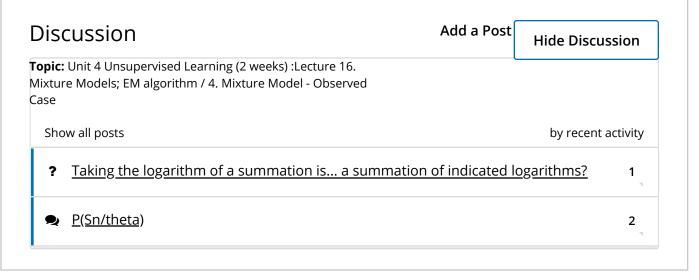
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You have used 2 of 2 attempts

1 Answers are displayed within the problem

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