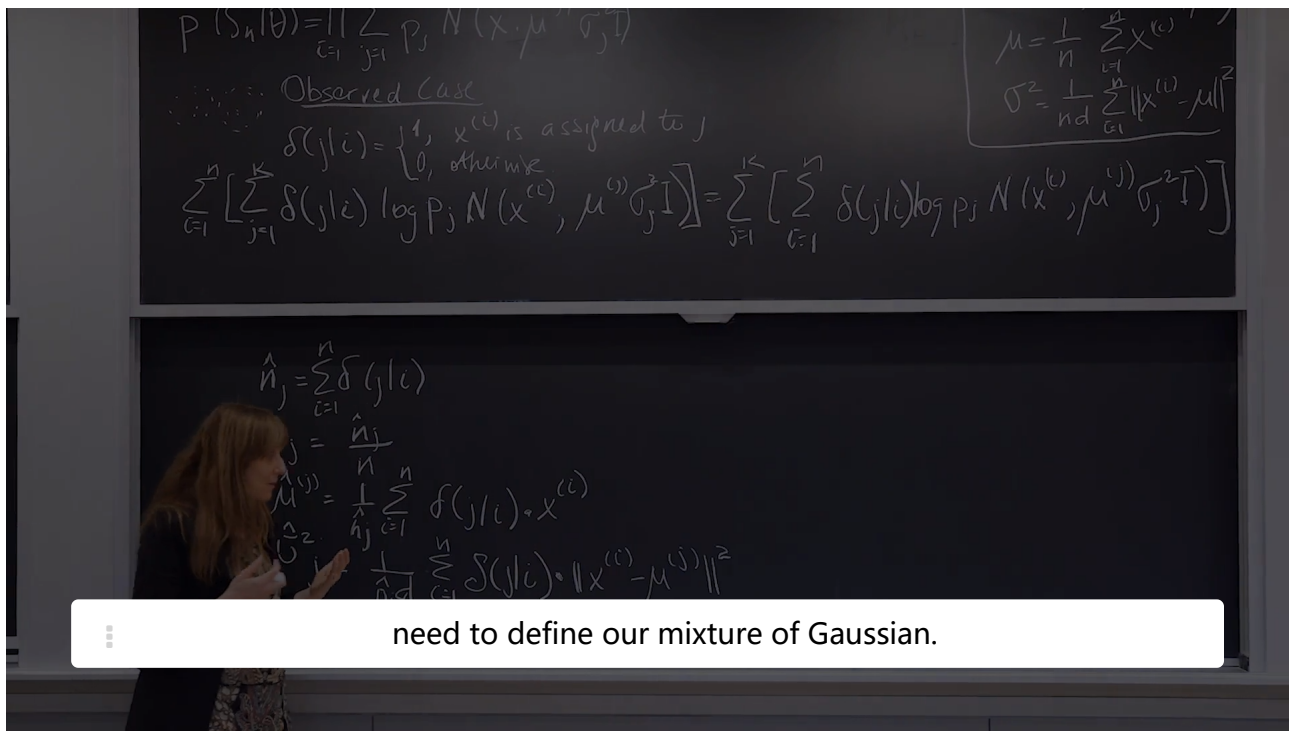
# 4. Mixture Model - Observed Case
## Estimating the Parameters in the Observed Case




10:22 / 10:22 1.0x

make sure that we are selecting point that really belong

to this specific cluster.

So what I've done so far, I've demonstrated to you

how, given the observed case, when we know to which component

each point belong, I've demonstrated to you how

we can estimate all the parameters that we

**need to define our mixture of Gaussian.**

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## Observed Case: An Example Problem

4/4 points (graded)
Let $K = 2$ and let $[-1.2 \ -0.8]^T$, $[-1 \ -1.2]^T$, $[-0.8 \ -1]^T$ be three observed points in cluster 1 and $[1.2 \ 0.8]^T$, $[1 \ 1.2]^T$, $[0.8 \ 1]^T$ 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 $[-1 \ -1]^T$ and $[1 \ 1]^T$.

Submit You have used 1 of 2 attempts

Answers are displayed within the problem

## Discussion

Show Discussion

**Topic:** Unit 4 Unsupervised Learning (2 weeks) :Lecture 16. Mixture Models; EM algorithm / 4. Mixture Model - Observed Case

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