

Machine Learning with Python-From Linear Models to Deep Learning

Progress Discussion Resources Dates <u>Course</u>

☆ Course / Unit 4. Unsupervised Learning (2 w... / Lecture 16. Mixture Models; E



2. Recap of Maximum Likelihood Estimation for Multinomial and

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Exercises due Apr 19, 2023 08:59 -03 Completed

So far, in clustering we have assumed that the data has no probabilistic generative mode we have used various iterative algorithms based on similarity measures to come up with data points into clusters. In this lecture, we will assume an underlying probabilistic generative data us to a natural clustering algorithm called the **EM algorithm**.

While a "hard" clustering algorithm like k-means or k-medoids can only provide a cluster the EM algorithm, along with the generative model driving its equations, can provide the ("soft" assignments) that every data point belongs to any cluster.

The EM algorithm will also form the basis for a portion of **Project 4** in which we explore via Gaussian mixtures.

MLE for Multinomial and Gaussian Models

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Video

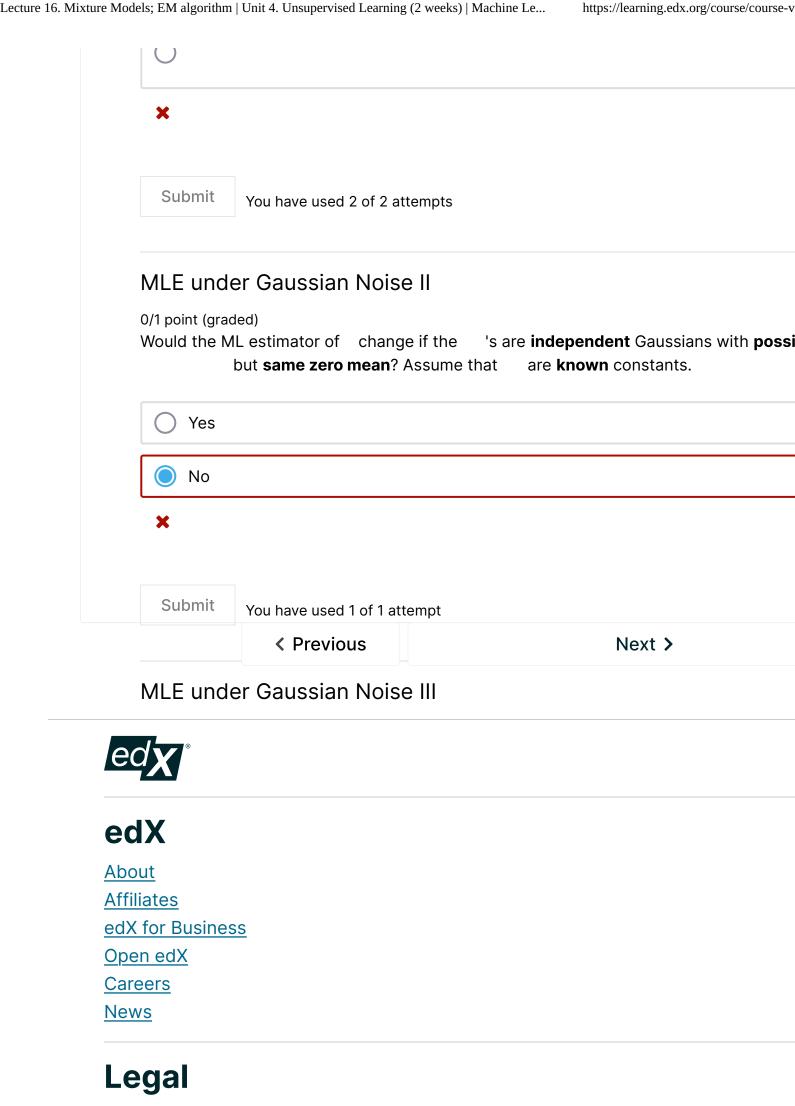
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MLE under Gaussian Noise I



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It looks innocent, but requires some computation...













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