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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 model. In this lecture, we have used various iterative algorithms based on similarity measures to come up with clusters of data points into clusters. In this lecture, we will assume an underlying probabilistic generative model that will lead 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 assignment for each data point, the EM algorithm, along with the generative model driving its equations, can provide the posterior probabilities ("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 clustering via Gaussian mixtures.

MLE for Multinomial and Gaussian Models



▶ 0:00 / 0:00

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Video

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You have used 2 of 2 attempts

MLE under Gaussian Noise II

0/1 point (graded)

Would the ML estimator of μ change if the μ_i 's are **independent** Gaussians with **possible different variances** but **same zero mean**? Assume that σ_i^2 are **known** constants.



Yes



No



You have used 1 of 1 attempt

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MLE under Gaussian Noise III

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It looks innocent, but requires some computation...



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