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2. Limitations of the K Means Algorithm

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

Limitations of the K Means Algorithm



▶ 0:00 / 0:00

▶ 1.25x

Video

[!\[\]\(3211b5d1d968fc1665909b34f9f16010_img.jpg\) Download video file](#)

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Limitations of the K-Means Algorithm I

0/1 point (graded)

Remember that the K-Means Algorithm is given as below:

1. Randomly select z_1, \dots, z_K

2. Iterate

1. Given z_1, \dots, z_K , assign each data point $x^{(i)}$ to the closest z_j , so that

$$\text{Cost}(z_1, \dots, z_K) = \sum_{i=1}^n \min_{j=1, \dots, k} \|x^{(i)} - z_j\|^2$$

☒ The algorithm may output different and depending on tr

☐ Line 2.2 of the algorithm(Given find the best representatives
cost-minimizing representatives .



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You have used 3 of 3 attempts

Limitations of the K-Means Algorithm II

2/2 points (graded)

Suppose we have a 1D dataset drawn from 2 different Gaussian distribution

. The dataset contains data points from each of the two distributions for so

Define **optimal clustering** to be the assignment of each point to the more likely Gaussi
knowledge of the generating distribution.

Consider the case where , would you expect a 2-means algorithm to approxim
clustering?

☒ Yes

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☐ No



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💬 Limitations of the K-Means Algorithm I [STAFF]

In the solution of the first problem, in the second formula for z , x is incorrectly written as index .



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