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Machine Learning with Python-From Linear Models to Deep Learning

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1. K-means and K-medoids

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Homework due Apr 19, 2023 08:59 -03   Past due

Assume we have a 2D dataset consisting of $(0, -6), (4, 4), (0, 0), (-5, 2)$. We wish

k-medoids clustering with $k = 2$. We initialize the cluster centers with $(-5, 2), (0, -6$

For this small dataset, in choosing between two equally valid exemplars for a cluster in

them with priority in the order given above (i.e. all other things being equal, you would

center over $(-5, 2)$).

For the following scenarios, give the clusters and cluster centers after the algorithm co

coordinate of each cluster center as a square-bracketed list (e.g. `[0, 0]`); enter each cl

similar format, separated by semicolons (e.g. `[1, 2]; [3, 4]`).

Clustering 1

4 points possible (graded)

K-medoids algorithm with l_1 norm.

Cluster 1 Center:

Cluster 1 Members:

Cluster 2 Center:

Cluster 2 Members:

Submit   You have used 0 of 3 attempts

Clustering 2

1.6666666666666665/4 points (graded)

K-medoids algorithm with l_2 norm.

Cluster 1 Center: [0, 0]

Clustering 3

4.0/4 points (graded)
K-means algorithm with   norm

Note: For K-means algorithm with   norm, you need to use median instead of mean wh
centroid. For details, you can check out this Wiki page.

Cluster 1 Center: [-0.5, 3]   ✔

Cluster 1 Members: [-5, 2]; [4, 4]   ✔

Cluster 2 Center: [0, -3]   ✔

Cluster 2 Members: [0, 0]; [0, -6]   ✔

Submit   You have used 3 of 3 attempts

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? I am not sure how to use median rather than mean to find the centroid?

I tried looking at the wiki page but still do not get it. Can anyone give me an example?

💬 A visual explanation of l1 and l2 norm

It may help. https://youtu.be/FiSy6zWDfiA

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