5. Clustering Definition

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

Clustering Definition

0:00 / 0:00 1.0x

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Partition Definition

1/1 point (graded)

A **partition** of a set is a grouping of the set's elements into non-empty subsets, in such element is included in one and only one of the subsets. In other words, $C_1, C_2, \ldots, C$ $\{1, 2, \ldots, n\}$ if and only if

$$C_1 \cup C_2 \cup \ldots \cup C_K = \{1, 2, \ldots, n\}$$

and

$$C_i \cap C_j = \emptyset \quad \text{for any } i \neq j \text{ in } \{1, \ldots, k\}$$

Now, which of the following is a partition of ? Select all those apply.

- [x]
- [ ]
- [ ]
- [x]
- [x]

✔

Submit You have used 1 of 3 attempts

Clustering Definition: The Input

1/1 point (graded)

Remember that classification takes the training set

and the number of classes as input. (where is the feature vector and is the lab these were **given** so that we can find a classifier that will best classify the test set into classes.)

Remember in the lecture above that now we are discussing clustering, which has a diff different goal from classification. Which of the following are the inputs (givens) of clust apply.

- [x] Set of feature vectors
- [ ] Set of feature vectors and their labels
- [x] The number of clusters

(Select all those apply.)

- [x] A partition of indices into sets,
- [x] "Representatives" in each of the partition sets, given as
- [ ] Number of clusters
- [ ] Set of feature vectors

✔

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Discussion

Topic: Unit 4. Unsupervised Learning (2 weeks) :Lecture 13. Clustering 1 / 5. Clustering Definition

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- Union of partitions @ 1:30 in the video
  Professor says And I want to emphasize that we are not remembering the element but the index or the eleme
- Partition Definition Example
  The example in the first question lists {3}, {2}, {1}; {2,1}, {3}; and {2,3,1} as ALL of the partitions of the set {1,2,
- definition on partition not 100% accurate
  to me, the mathematical def. of a partition shown here is lacking the constraint mentioned in the text that no
- ? Representatives
  In order to choose a representative of a cluster, could we select the point in that cluster that has the greates

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