

Weka Explorer

Preprocess Classify Cluster Associate Select attributes Visualize

Clusterer

Choose

MakeDensityBasedClusterer -M 1.0E-6 -W weka.clusterers.SimpleKMeans -- -init 0 -max-candidates 100 -periodic-pruning 10000 -min-density 2.0 -t1 -1.25 -t2 -1.0 -N 2 -A

Cluster mode

 Use training set Supplied test set

Set...

 Percentage split

%

66

 Classes to clusters evaluation

(Nom) class

 Store clusters for visualization

Ignore attributes

Start

Stop

Result list (right-click for options)

14:36:08 - MakeDensityBasedClusterer

Clusterer output

== Run information ==

Scheme: weka.clusterers.MakeDensityBasedClusterer -M 1.0E-6 -W weka.clusterers.SimpleKMeans -- -init 0 -max-candidates 100 -periodic-pruning 10000 -min-density 2.0 -t1 -1.25 -t2 -1.0 -N 2 -A
Relation: labor-neg-data
Instances: 57
Attributes: 17
duration
wage-increase-first-year
wage-increase-second-year
wage-increase-third-year
cost-of-living-adjustment
working-hours
pension
standby-pay
shift-differential
education-allowance
statutory-holidays
vacation
longterm-disability-assistance
contribution-to-dental-plan
bereavement-assistance
contribution-to-health-plan
class
Test mode: evaluate on training data

== Clustering model (full training set) ==

MakeDensityBasedClusterer:

Wrapped clusterer:

kMeans

=====

Status
OK

Log



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Cluster mode

- Use training set
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- Percentage split %
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- (Nom) class
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Clusterer output**MakeDensityBasedClusterer:****Wrapped clusterer:****kMeans****=====**

Number of iterations: 3

Within cluster sum of squared errors: 137.79496140158423

Initial starting points (random):

```
Cluster 0: 1,5,7,3.971739,3.913333,none,40,empl_contr,7.444444,4,no,11,generous,yes,full
Cluster 1: 1,2,3.971739,3.913333,tc,40,ret_allw,4,0,no,11,generous,no,none,no,none,bad
```

Missing values globally replaced with mean/mode

Final cluster centroids:

Attribute	Full Data (57.0)	Cluster#	
		0 (48.0)	1 (9.0)
=====			
duration	2.1607	2.2533	1.6667
wage-increase-first-year	3.8036	3.9834	2.8444
wage-increase-second-year	3.9717	4.0209	3.7097
wage-increase-third-year	3.9133	3.9511	3.7119
cost-of-living-adjustment	none	none	none
working-hours	38.0392	37.7541	39.5599
pension	empl_contr	empl_contr	none
standby-pay	7.4444	7.7431	5.8519
shift-differential	4.871	5.2298	2.957
education-allowance	no	no	no
statutory-holidays	11.0943	11.237	10.3333
vacation	below average below average below average		



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Cluster mode:

- Use training set
- Supplied test set
- Percentage split %
- Classes to clusters evaluation
(Nom) class
- Store clusters for visualization

Cluster output:

```
Cluster: 0 Prior probability: 0.8305
Attribute: duration
Normal Distribution. Mean = 2.2533 StdDev = 0.6606
Attribute: wage-increase-first-year
Normal Distribution. Mean = 3.9834 StdDev = 1.3358
Attribute: wage-increase-second-year
Normal Distribution. Mean = 4.0209 StdDev = 1.0581
Attribute: wage-increase-third-year
Normal Distribution. Mean = 3.9511 StdDev = 0.6529
Attribute: cost-of-living-adjustment
Discrete Estimator. Counts = 37 9 5 (Total = 51)
Attribute: working-hours
Normal Distribution. Mean = 37.7541 StdDev = 2.4286
Attribute: pension
Discrete Estimator. Counts = 6 3 42 (Total = 51)
Attribute: standby-pay
Normal Distribution. Mean = 7.7431 StdDev = 1.6253
Attribute: shift-differential
Normal Distribution. Mean = 5.2298 StdDev = 3.403
Attribute: education-allowance
Discrete Estimator. Counts = 9 41 (Total = 50)
Attribute: statutory-holidays
Normal Distribution. Mean = 11.237 StdDev = 1.2276
Attribute: vacation
Discrete Estimator. Counts = 20 15 16 (Total = 51)
Attribute: longterm-disability-assistance
Discrete Estimator. Counts = 48 2 (Total = 50)
Attribute: contribution-to-dental-plan
Discrete Estimator. Counts = 4 33 14 (Total = 51)
Attribute: bereavement-assistance
Discrete Estimator. Counts = 49 1 (Total = 50)
```

Result list (right-click for options):

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Status: OK

Log: x0

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Cluster mode

Use training set

Supplied test set Set...

Percentage split %

Classes to clusters evaluation (Nom) class

Store clusters for visualization

Ignore attributes

Start Stop

Result list (right-click for options)

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Clusterer output

```
Attribute: shift-differential
Normal Distribution. Mean = 2.957 StdDev = 1.6494
Attribute: education-allowance
Discrete Estimator. Counts = 3 8 (Total = 11)
Attribute: statutory-holidays
Normal Distribution. Mean = 10.3333 StdDev = 0.66667
Attribute: vacation
Discrete Estimator. Counts = 6 4 2 (Total = 12)
Attribute: longterm-disability-assistance
Discrete Estimator. Counts = 3 8 (Total = 11)
Attribute: contribution-to-dental-plan
Discrete Estimator. Counts = 7 4 1 (Total = 12)
Attribute: bereavement-assistance
Discrete Estimator. Counts = 7 4 (Total = 11)
Attribute: contribution-to-health-plan
Discrete Estimator. Counts = 7 2 3 (Total = 12)
Attribute: class
Discrete Estimator. Counts = 10 1 (Total = 11)

Time taken to build model (full training data) : 0.01 seconds

==== Model and evaluation on training set ===

Clustered Instances

0      44 ( 77%)
1      13 ( 23%)

Log likelihood: -18.51266
```

Status OK

Log x0