

DWDM

WEKA – PROGRAM 23

Weka Explorer

Preprocess Classify **Cluster** Associate Select attributes Visualize

Clusterer

Choose **EM** -I 100 -N -1 -X 10 -max -1 -ll-cv 1.0E-6 -ll-iter 1.0E-6 -M 1.0E-6 -K 10 -num-slots 1 -S 150

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)

- 17:04:08 - EM
- 17:10:04 - SimpleKMeans
- 17:19:56 - EM**

Clusterer output

```
=== Run information ===

Scheme:      weka.clusterers.EM -I 100 -N -1 -X 10 -max -1 -ll-cv 1.0E-6 -ll-iter 1.0E-6
Relation:     iris
Instances:    150
Attributes:   5
  sepallength
  sepalwidth
  petallength
  petalwidth
  class
Test mode:    evaluate on training data

=== Clustering model (full training set) ===

EM
==

Number of clusters selected by cross validation: 7
Number of iterations performed: 11

Attribute      Cluster
                0      1      2      3      4      5      6
                (0.15) (0.13) (0.15) (0.14) (0.17) (0.19) (0.08)
=====
sepallength
  mean          5.2866  6.5938  5.5411  6.0422  6.2713  4.7829  7.4963
  std. dev.     0.2413  0.2374  0.3135  0.3856  0.4044  0.2448  0.2516
sepalwidth
```

Status

OK Log x 0

Weka Explorer

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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)
 17:04:08 - EM
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Clusterer output

petallength		petalwidth		class	
mean	1.5193	0.3052	23.1474	1	1
std. dev.	0.1599	0.1218	1	1.0124	23.6577
	0.2519	1.1685	1	2.9561	26.3738
	0.3486	1.81	1	1.0361	12.3083
	0.2977	0.119	1	30.8526	14.3083
	0.2067	0.0555	1		
	0.1681		1		
	0.3368		1		

Time taken to build model (full training data) : 0.53 seconds

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

Clustered Instances

0	22 (15%)
1	21 (14%)
2	23 (15%)
3	20 (13%)
4	25 (17%)
5	28 (19%)
6	11 (7%)

Log likelihood: -1.4698

Status
OK Log x 0



K – MEANS

Weka Explorer

Preprocess Classify **Cluster** Associate Select attributes Visualize

Clusterer
Choose **EM** -I 100 -N -1 -X 10 -max -1 -ll-cv 1.0E-6 -ll-iter 1.0E-6 -M 1.0E-6 -K 10 -num-slots 1 -S 150

Cluster mode
☒ Use training set
☐ Supplied test set Set...
☐ Percentage split % 66
☐ Classes to clusters evaluation (Nom) class v
☒ Store clusters for visualization

Ignore attributes

Start Stop

Result list (right-click for options)

- 17:04:08 - EM
- 17:10:04 - SimpleKMeans
- 17:19:56 - EM
- 17:21:49 - EM**

Clusterer output

```
=== Run information ===

Scheme:      weka.clusterers.EM -I 100 -N -1 -X 10 -max -1 -ll-cv 1.0E-6 -ll-iter 1.0E-6
Relation:     iris
Instances:    150
Attributes:   5
    sepalength
    sepalwidth
    petallength
    petalwidth
    class
Test mode:    evaluate on training data

=== Clustering model (full training set) ===


EM
==

Number of clusters selected by cross validation: 7
Number of iterations performed: 11

Attribute      Cluster
                0      1      2      3      4      5      6
                (0.15) (0.13) (0.15) (0.14) (0.17) (0.19) (0.08)
=====
sepalength
  mean         5.2866  6.5938  5.5411  6.0422  6.2713  4.7829  7.4963
  std. dev.     0.2413  0.2374  0.3135  0.3856  0.4044  0.2448  0.2516

sepalwidth
```

Status
OK

Log  x 0

Weka Explorer

Preprocess **Classify** Cluster Associate Select attributes Visualize

Clusterer: Choose **EM** -I 100 -N -1 -X 10 -max -1 -ll-cv 1.0E-6 -ll-iter 1.0E-6 -M 1.0E-6 -K 10 -num-slots 1 -S 150

Cluster mode

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

Ignore attributes

Start Stop

Result list (right-click for options)

- 17:04:08 - EM
- 17:10:04 - SimpleKMeans
- 17:19:56 - EM
- 17:21:49 - EM**

Clusterer output

	std. dev.	0.2865	0.169	0.2508	0.2238	0.2645	0.2617	0.3919
petallength								
mean	1.5193	5.5394	3.8593	5.0845	4.5635	1.42	6.3244	
std. dev.	0.1599	0.2519	0.3486	0.2977	0.2067	0.1681	0.3368	
petalwidth								
mean	0.3052	2.2	1.1685	1.81	1.4398	0.1953	2.0501	
std. dev.	0.1218	0.1953	0.1345	0.2113	0.119	0.0555	0.2479	
class								
Iris-setosa	23.1474	1	1	1	1	28.8526	1	
Iris-versicolor	1	1.0124	23.6577	2.9561	26.3738	1	1	
Iris-virginica	1	21.0543	1.0008	19.6005	1.0361	1	12.3083	
[total]	25.1474	23.0667	25.6585	23.5566	28.4098	30.8526	14.3083	


Time taken to build model (full training data) : 0.55 seconds

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

Clustered Instances

0	22 (15%)
1	21 (14%)
2	23 (15%)
3	20 (13%)
4	25 (17%)
5	28 (19%)
6	11 (7%)

Log likelihood: -1.4698

Status OK  x0

