

EXPERIMENT-7

DATASEGMENTATION BY EXPECTATION MAXIMISATION ALGORITHM THROUGH WEKA

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Subject: CSA1672, Data warehouse and data mining

OUTPUT:

The screenshot shows the Weka Explorer interface with the EM clustering model applied to the 'boston' dataset. The 'Clusterer' tab is selected, and the 'EM' model is chosen. The 'Cluster mode' is set to 'Use training set'. The 'Clusterer output' pane displays the following information:

```
=== Run information ===
Scheme: weka.clusterers.EM -I 100 -M -1 -K 10 -max -1 -ll-cv 1.0E-6 -ll-iter 1.0E-6 -M 1.0E-6 -R 10 -num-slots 1 -S 100
Relation: boston
Instances: 506
Attributes: 14
CRIM
ZN
INDUS
CHAS
NOX
RM
AGE
DIS
RAD
TAX
PTRATIO
B
LSTAT
MEDV

Test mode: evaluate on training data

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

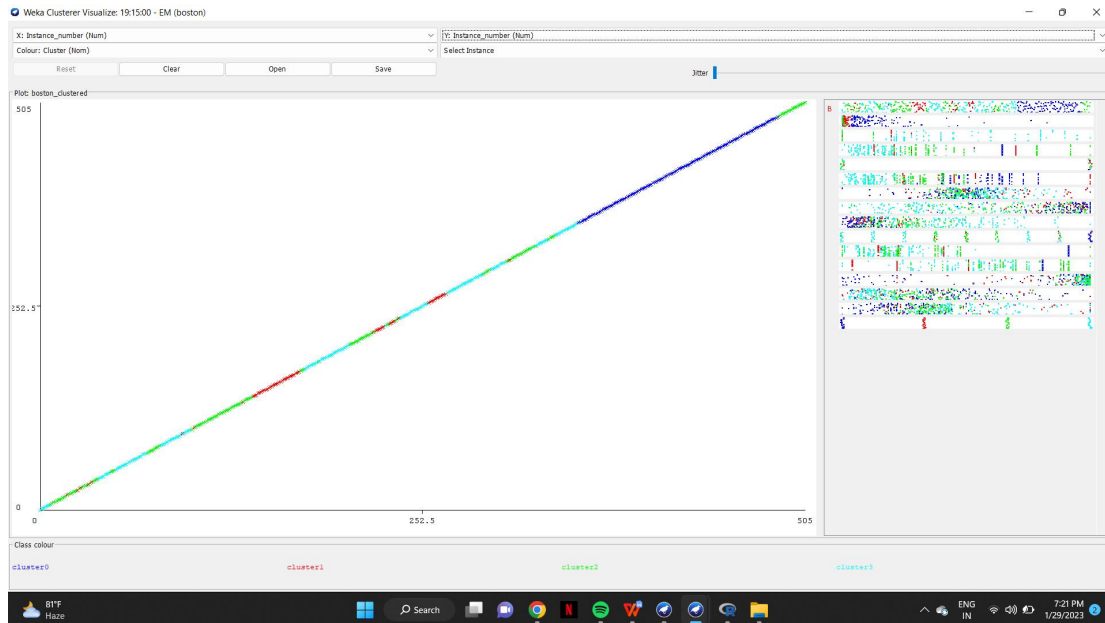
EM
==

Number of clusters selected by cross validation: 4
Number of iterations performed: 2

Attribute      Cluster
              0      1      2      3
(0.26) (0.15) (0.27) (0.32)
=====
CRIM
```

The screenshot shows the Weka Explorer interface with the EM clustering model applied to the 'boston' dataset. The 'Clusterer' tab is selected, and the 'EM' model is chosen. The 'Cluster mode' is set to 'Use training set'. The 'Clusterer output' pane displays the following information:

```
Cluster
Attribute      0      1      2      3
(0.26) (0.15) (0.27) (0.32)
=====
CRIM
mean 12.7593 1.1868 0.3136 0.0777
std. dev. 12.5917 0.5556 0.302 0.0611
ZN
mean 0 3.7331 1.0664 32.6014
std. dev. 23.3225 7.5331 4.8133 31.0823
INDUS
mean 18.1 12.2003 12.186 4.1504
std. dev. 0 6.7691 6.1655 1.8638
CHAS
0 125 63.0464 129.5664 157.3872
1 9 13.9133 8.1229 7.9639
[total] 134 76.9596 137.6893 165.3511
NOX
mean 0.6724 0.631 0.5316 0.4438
std. dev. 0.0608 0.1341 0.0554 0.0335
RM
mean 6.0222 6.5432 6.0248 6.5939
std. dev. 0.7157 0.9906 0.3228 0.5807
AGE
mean 89.8053 84.8763 72.0378 41.0622
std. dev. 12.5779 17.1966 24.7759 20.5683
DIS
mean 2.0613 2.6406 3.5132 5.9599
std. dev. 0.6156 1.0966 1.271 1.9273
RAD
1 1 1.1751 5.9089 15.916
```



K-MEANS:

