**Data set: Boston housing**

FCM with c =6 clusters

Principle of justifiable granularity with the criterion

V = cov\* sp

Where

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Info granule # | 1 | 2 | 3 | 4 | 5 | 6 |
| opt | 0.275 | 0.3 | 0.275 | 0.4 | 0.325 | 0.35 |
| V | 41.91 | 18.31 | 62.44 | 21.41 | 41.94 | 27.2 |

Cov = 

with ||. || computed as



and

sp =1-

My implementation with c=6 and beta=1

And the similarity equation is from your newly published paper

A close up of a clock

Description automatically generated, where I use distance as “i” in my implementation.

My implementation result of similarity is, with beta =1

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Info granule | 1 | 2 | 3 | 4 | 5 | 6 |
| 1 |  | 15.17 | 17.34 | 20.14 | 20.14 | 20.89 |
| 2 |  |  | 12.21 | 14.58 | 15.27 | 10.41 |
| 3 |  |  |  | 34.01 | 33.48 | 31.78 |
| 4 |  |  |  |  | 36.68 | 31.93 |
| 5 |  |  |  |  |  | 31.29 |
| 6 |  |  |  |  |  |  |

And under the optimal beta, the result is

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Info granule | 1 | 2 | 3 | 4 | 5 | 6 |
| 1 |  | 2.12 | 5.15 | 7.08 | 8.11 | 1.07 |
| 2 |  |  | 0.3 | 1.06 | 1.30 | 0 |
| 3 |  |  |  | 28.73 | 23.50 | 21.28 |
| 4 |  |  |  |  | 25.77 | 20.99 |
| 5 |  |  |  |  |  | 16.36 |
| 6 |  |  |  |  |  |  |