

# Features Mining for Multimedia Indexing And Retrieval (Poster)

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# Features Mining for Multimedia Indexing And Retrieval

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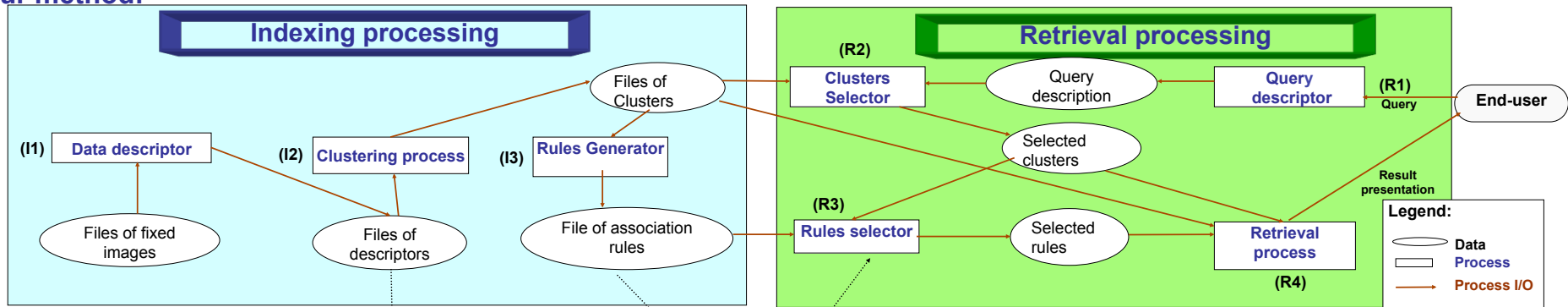
## Problem

- How to solve the following problem : Retrieve all the images similar to a given image using appropriate global visual features ?
- What about query response time and quality of results ?

**Our aim:** Describe a new method applied to large still image databases that combines clustering and association rules mining in order to:

- better organize the image collections**
- improve the performance of query processing**

## Our method:



## Experimentations:

### Conditions:

- 7727 of still images
- 5 global MPEG-7 features of color, texture, and form
- K-means algorithm for clusters computation and Apriori algorithm for association rules computation
- minsup= 10% and minconf = 50%
- C++ programming under Linux OS

### MPEG-7 Descriptors

```
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  <CbDCCoeff>26</CbDCCoeff>
  <CrDCCoeff>37</CrDCCoeff>
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  <CrACCoeff2>16 15</CrACCoeff2>
</Descriptor>
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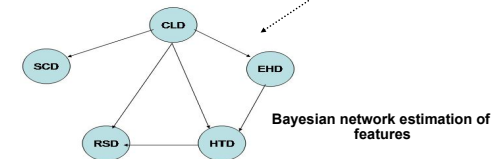
### Association Rules

- (1, CLD) -> (3,RSD) (11, 69.2)
- (2, CLD) -> (2,SCD) (12.3, 67.4)
- (2, SCD) -> (2,CLD) (12.3, 55.1)
- (2, CLD) -> (0,HTD) (10, 55.1)
- (1, SCD) -> (4,CLD) (13, 52.6)
- (1, SCD) -> (4,EHD) (12,8, 51,5)

Clusters Support (%) Confidence (%)

### Rules produced by ACM

Strong relations between modalities of variables	Induced modalities
(2,CLD) and (2,SCD)	(0,HTD) (54.4%)
(1,CLD) or (3,CLD) and (2,HTD)	(0,SCD) (59.7%) and/or (4,EHD) (51.3%)
(0,CLD) and (3,HTD)	(0,SCD) (47.9%) or (3,SCD) (45.7%)
(4,CLD) and (1,SCD)	(4,EHD) (52.6%)
(3,CLD) and (0,SCD)	(2,EHD) (52.2%) and/or (3,RSD) (54.4%)



## Conclusion:

- The method can be applied to every kind of very large image databases
- Interesting perspectives for optimizing query plans

Reference: A. Kouomou et al. **Multimedia Indexing and Retrieval with Features Association Rules Mining**, IEEE ICME 2004. To appear .