

# Rough Set Based Analysis of Document Images

**Ushasi Chaudhuri**

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# Definition

## Definition (Rough-set)

A *Rough-set* is an approximation of a crisp set in terms of a pair of polygonal sets for lower and upper approximations of the original set.

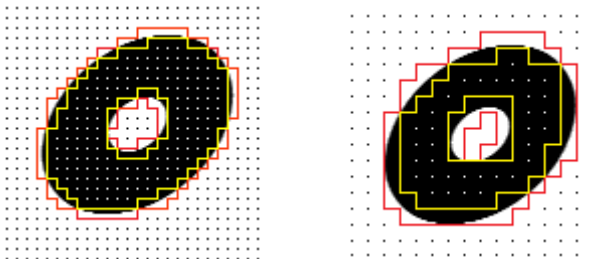
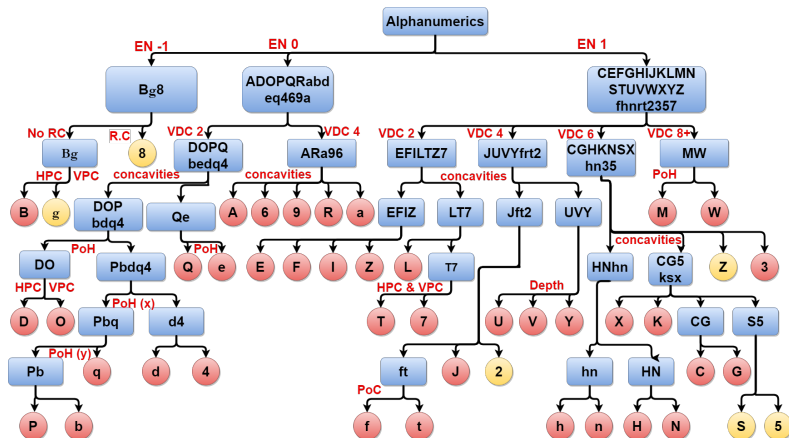


Figure: Cell-size  $6 \times 6$  and  $9 \times 9$ .

# Classification Criteria



£

E

F

F

K

K

M

M

S

S

R

R

# Logo Retrieval

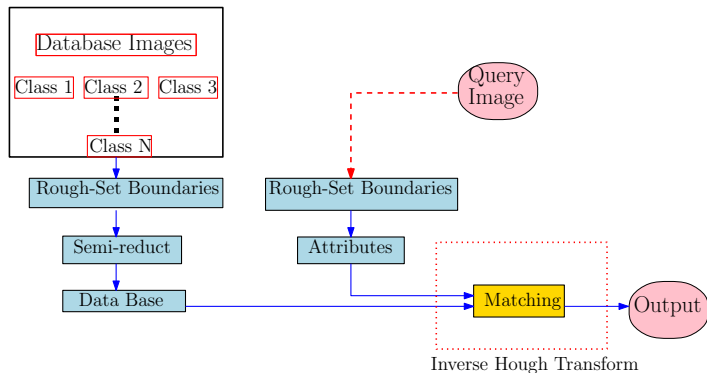
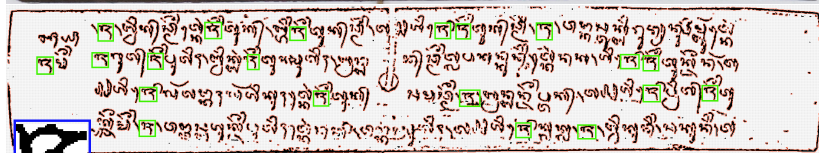
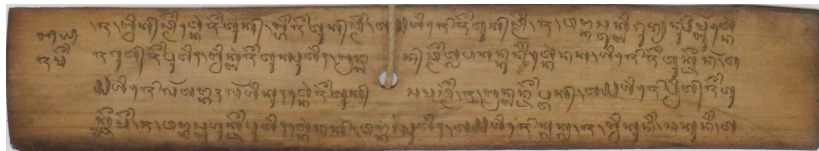


Figure: Logo image classes showing very good results.

# Spotting



Query Image

- Main advantage of the grid polygon approximation method is its reduced time complexity.
- When used for some large scale process, it saves us a huge amount of time.
- Also memory efficient as only classification criteria to be stored (in character recognition).

# May I ask you??

How are 'accuracy' and 'efficiency' related to each other in this method?  
(OR Can you detect signature forgery by this method?)