

# Recognizing hand-drawn images using shape context

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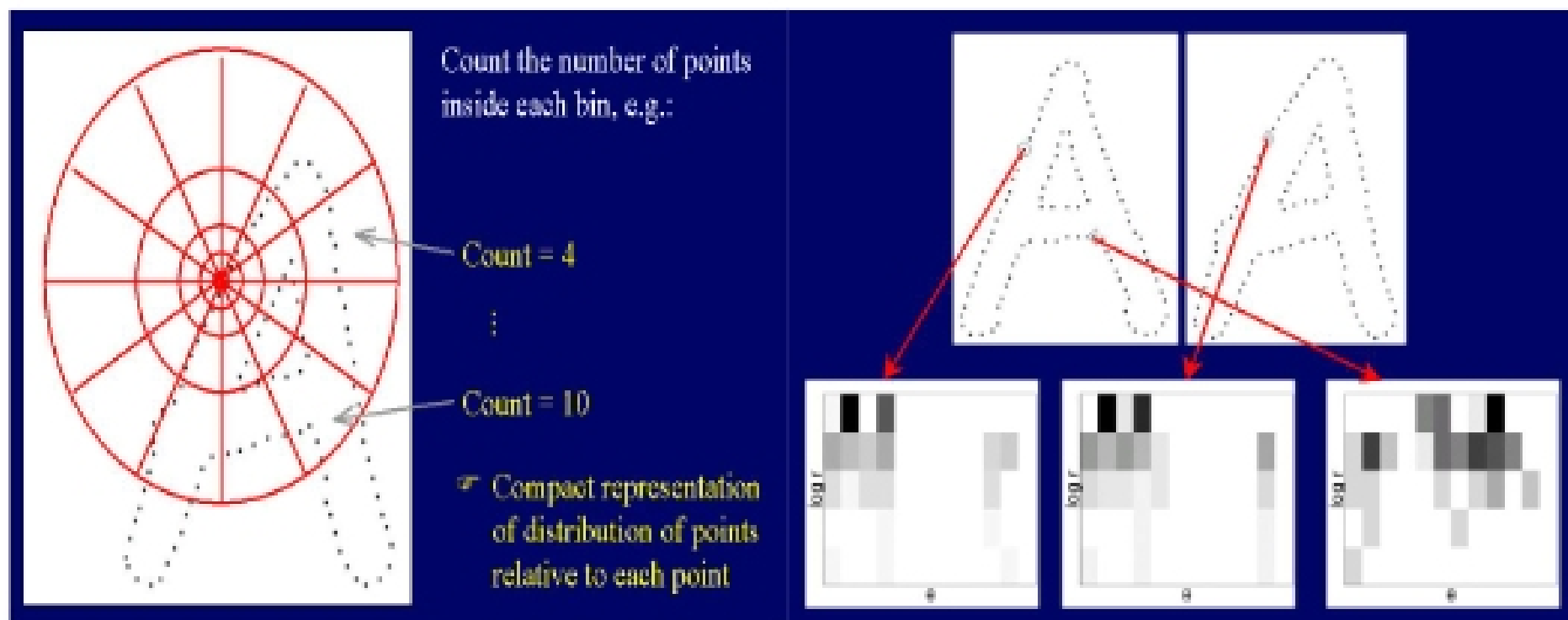
November 29, 2001

# Shape Context by Mori et al.

Key idea: represent an image in terms of **descriptors** at certain locations that describe the image **relative** to those locations

**Shape** context of a point is the histogram of the relative positions of all other points in the image.

Use bins that are uniform in log-polar space to emphasize close-by, **local structure**.



# Representative shape context: efficient retrieval of similar shapes by Mori et al.

**Matching:** Given two images, represented as  $n$  shape context descriptors, we want to find a one-to-one assignment of these descriptors, such that the  $X^2$  distance for the assignment is minimized  $\rightarrow O(n^3)$  algorithm.

## **Fast Pruning:**

1. Represent the query image by a small number of shape context descriptors
2. To calculate the cost of a match between the query image and an image in a DB perform nearest neighbors search
3. Return a short list of the first  $K$  best matches