

# Image Indexing and Spatial Similarity-Based Retrievals

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Similarity-based retrieval is an essential requirement for retrieval of images by contents. In this paper, we are introducing a new symbolic image representation technique and an indexing scheme for spatial similarity-based retrieval of images. In this technique, an image is recursively decomposed into a spatial arrangement of distinct features to preserve the spatial information of image objects. This scheme is independent of image size, translation and rotation and is essentially domain independent. Quadrees are used to manage the decomposition hierarchy and help in establishing a measure of similarity for the retrievals. This scheme is incremental in nature and allows match at various levels of details, from coarse to fine. A two phase indexing scheme based on the concepts of signature files and quadtree matching is constructed. Use of signature files prunes the search space by discriminating against the non-matching entities which are further eliminated during the coarser tree matching process. For a given query, A facility is provided to rank order the retrieved spatially similar images from the image database for subsequent browsing and selection by the user.