

ABSTRACT

Retrieval by spatial similarity involves with retrieving and recognizing those images in the database that are spatially similar to the query image, even after translation, scaling, rotation, or any arbitrary combination of transformations. To process such task, a spatial similarity function that assesses the degree of spatial relationship between query and database image is required.

In this paper, an efficient spatial similarity algorithm, SIM_{CCO} , for computing spatial similarity between two symbolic images is proposed. The algorithm based on SIM_{DTC} . SIM_{CCO} is a function of the number of common objects and the closeness of directional spatial relationships between the corresponding edges. SIM_{CCO} introduce the point “Centroid of Common Objects” to connect any common object as edge, which resulting in the linear time complexity in terms of the number of total objects in the database and query image. Hence, SIM_{CCO} has the higher speed than SIM_{DTC} . The SIM_{CCO} is robust in the sense that it can deal with translation, scaling, perfect rotation and it is able to rank multiple rotation variants. The algorithm has been tested using TESSA image database and compared with expert provided rank ordering.