ABSTRACT

Reverse Nearest neighbours (RNN) is a variant of Nearest Neighbours concept that can be used to find nearest neighbours from a query point. This concept is commonly implemented to a location based service to find an interesting area for user. This capability is thanks to NN feature to using the nearest neighbor from a point as a guid for finding those area. The RNN concept of inverse is capable to generate a different set of result and not symmetrical from a common nearest neighbours concept. Because of its nature, the alternative solution that different from common nearest neighbours concept is worth to be researched.

Yet, standard RNN computation spend a lot of resource and very inefficient. This is because RNN must verify its result with every nearest neighbours. This weakness is not making RNN suitable for location based service that usually answered by common nearest neighbours method. RNN right now is not good for processing mobile and dynamic dataset because of its high overhead value.

By utilizing an approach of a region concept, RNN candidate can be generated without rechecking each point inside datasetj. Contact Zone concept can be used to eliminate processed candidate to suppress the effect of computation. This method is generating RNN candidate without processing all data in space, making it available for use with dynamic and mobile dataset system.

Keywords: reverse *nearest neighbours*, influence zone, *nearest neighbours*, contact zone, peers, voronoi diagram.