

Abstract

For making a decision to choose one or some nearest objects from a certain place it is important to have an information about the distance from a place to that alternative objects. Valid information of the distance will guide the decision into the right one. Basically most of existing work consider euclidean distance measurement to solve the nearest distance problem. However, in practice, objects can usually move only on a pre-defined set of trajectories as specified by the underlying network. Thus, the important measure is the network distance, not an euclidean distance.

Incremental Network Expansion (INE) is one of the ways that can be used to get the network distance, because this algorithm get the desire objects by using bottom-up approach, where the process of searching k nearest objects starts from the query point and expands like a spider to get the desired interest objects along the way until they are encountered

Beside the implementation of INE method to solve the k Nearest Neighbour (kNN) problem, this final project also do the research about how to make a solution to get the recommended kNN if the Point of Interest (POI) is weighted by user preference. To solve this problem this final project propose utility measurement of network distance and user preferenced POI by using Simple Additive Weights (SAW) method. To get the optimal recommended kNN result it is important to choose the right value of this two parameter, the distance weight and the preference weight, and the ways to get the initial kNN to get the best result with the best performance, and from this research the optimal value of distance weight and the preference weight is 0.48 and 0.52 with $n=15$ to the condition of the road network that implemented in this research.

Keywords : *k Nearest Neighbour (kNN), Incremental Network Expansion (INE), Simple Additive Weights (SAW)*