Efficient Clue-based Route Search on Road Networks

Abstract:

With the advances in geo-positioning technologies and location-based services, it is nowadays quite common for road networks to have textual contents on the vertices. Previous work on identifying an optimal route that covers a sequence of query keywords has been studied in recent years. However, in many practical scenarios, an optimal route might not always be desirable. For example, a personalized route query is issued by providing some clues that describe the spatial context between PoIs along the route, where the result can be far from the optimal one.

Existing System:

The existing solutions for trip planning or route search problem are dealing with the scenarios when a user wants to visit a sequence of PoIs, each of which contains a user specified keyword. Different optimization constraints are proposed, and the goal is to find an optimal route with minimum cost. In general, the cost can be of various different types, such as travel distance, time or budget.

➢ Modeling Imprecise User Intention.
➢ Increased Flexibility in Trip Planning.
➢ Clue-based Route Navigation.

Disadvantages:

➢ Runs slow when compared to BAB algorithm.
➢ Less Efficiency.

Proposed System:

We first propose a greedy clue-based algorithm GCS with no index where the network expansion approach is adopted to greedily select the current best candidates to construct feasible
paths. Then, we devise an exact algorithm, namely clue-based dynamic programming CDP, to answer the query that enumerates all feasible paths and finally returns the optimal result. We propose a branch-and-bound algorithm BAB by applying filter-and-refine paradigm such that only a small portion of vertices are visited, thus improves the search efficiency. In order to quickly locate the candidate vertices, we develop AB-tree and PB-tree structures to speed up the tree traversal, as well as a semi-dynamic index updating mechanism.

Advantages:
- Efficiency improved.
- Runs much faster compared to other.

Modules:
- Greedy clue search algorithm.
- Clue-based dynamic programming algorithm.
- Branch and bound algorithm.

SYSTEM REQUIREMENTS

H/W System Configuration:-

Processor : Pentium –III
RAM : 256 MB (min)
Hard Disk : 20 GB
Key Board : Standard Windows Keyboard
Mouse : Two or Three Button Mouse
Monitor : SVGA

S/W System Configuration:-

Operating System : Windows95/98/2000/XP
<table>
<thead>
<tr>
<th>Component</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Server</td>
<td>Tomcat 5.0/6.X</td>
</tr>
<tr>
<td>Front End</td>
<td>HTML, Jsp</td>
</tr>
<tr>
<td>Scripts</td>
<td>JavaScript.</td>
</tr>
<tr>
<td>Server side Script</td>
<td>Java Server Pages.</td>
</tr>
<tr>
<td>Database</td>
<td>MySQL 5.0</td>
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<tr>
<td>Database Connectivity</td>
<td>JDBC</td>
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</tbody>
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