Thesis Title	A High Efficiency Method of Searching Minimum Cost-path for Network Using A* Algorithm
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Abstract

Network employs the dynamic data transmission path defined by transmission rate, capacities of link, delay time, and so on. Each node in the network knows only weights of data of its adjacent nodes. This thesis proposed a high-performance algorithm to find the shortest path of transmitting data. In order to gain the dynamic weight, dynamic routing is engaged. A* algorithm is applied to the path selection. It translates graph to tree relationship, then beginning to find a sub-path that has the smallest weight in the first level. After that, sub-path in the next level, considered as the shortest sub-path from the first level, is explored. In order to reduce the number of possible path, this process is repeated recursively until the destination is found. And this thesis also proposes the back tracking process for obtaining the minimum cost-path when there are the failure links. It is not nesessary starting for the searching process again at the root node.

From the simulation results and the comparison with the Dijkstra algorithm, the proposed algorithm awalys obtains the minimum cost-path with loop-free and

processing time is faster than the Dijkstra algorithm. The proposed algorithm also provides the same results when there are failure links. System stability in the sense of failure link response is also analyzed by using objective function. The result of the failure link system differs from the complete link system only 5 percent.