

## Top-K Shortest Distance as a Similarity Measure

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**Abstract :** Top-k shortest path routing problem is an extension of finding the shortest path in a given network. Shortest path is one of the most essential measures as it reveals the relations between two nodes in a network. However, in many real world networks, whose diameters are small, top-k shortest path is more interesting as it contains more information about the network topology. Many variations to compute top-k shortest paths have been studied. In this paper, we apply an efficient top-k shortest distance routing algorithm to the link prediction problem and test its efficacy. We compare the results with other base line and state-of-the-art methods as well as with the shortest path. Then, we also propose a top-k distance based graph matching algorithm.

**Keywords :** graph matching, link prediction, shortest path, similarity

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