A framework to recover single link failure on shortest path in shortest path tree

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Abstract
Risk management in many applications become very important for the uninterrupted continuation of the process. Shortest path and many related path planning problems play a vital role in many applications like robot navigation, games, transportation and communication routing. In problems like these and many other, efficient and reliable recovery from the adverse situation with minimum additional healing cost and delay is always required. This study presents a framework to construct shortest path tree with embedded backups for single link failure on any location in shortest path from source to destination. This tree entertain one link failure at one point of time. The cost of the presented algorithms is as low as any shortest path tree algorithm. So it is providing additional feature in the same cost.