Abstract

In this paper a new approximation algorithm for calculating the min-cut tree of an undirected edge-weighted graph has been proposed. This algorithm runs in \( O(Vd) \), where \( V \) is the number of vertices in the given graph and \( d \) is the degree of the graph. It is a significant improvement over time complexities of existing solutions. However, because of an assumption it does not produce correct result for all sort of graphs but for the dense graphs success rate is more than 90%. Moreover in the unsuccessful cases, the deviation from actual result is very less and for most of the pairs we obtain correct values of max-flow or min-cut. This algorithm is implemented in JAVA language and checked for many input cases.

References

Novel Approximation Algorithm for Calculating Maximum Flow in a Graph

- Flake G. W., Tarjan R. E. and Tsioutsiouliklis K. Graph Clustering and Minimum Cut Trees. Internet Mathematics, volume 1, issue 4, 385-408.

Index Terms

Computer Science  Algorithms

Keywords

Maximum Flow  approximation Algorithm  complexity  min-cut tree