Abstract

The Vertex Cover Problem calls for the selection of a set of vertices \( V \) in a way that all the edges of the graph, connected to those vertices constitute the set \( E \) of the given graph \( G = (V, E) \). The problem finds applications in various fields and is therefore, one of the most widely researched topics in NP Complete Problems. The problem is an NP Complete problem this work proposes a Genetic Algorithm based solution to handle the problem. The proposed algorithm has been implemented and tested for various graphs. These instances vary in the number of vertices and connectivity. The results are encouraging. This paper also explores the available techniques in order to put the things in the perspective. The future scope of this work intends to apply Diploid Genetic Algorithms to the problem to incorporate robustness into the proposed algorithm.

References

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The Applicability of Genetic algorithm to Vertex Cover

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Index Terms

Computer Science  Algorithms

Keywords

Keywords are Vertex Cover Problem, NP Completeness, Genetic Algorithm, Artificial Intelligence.