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Abstract

The development in the field of quantum computing gives us a significant edge over classical computing in terms of time and efficiency. This is particularly useful for NP-hard problems such as graph layout problems. Since many real world problems are effectively solved by genetic algorithm (GA) and the performance of GA highly depends upon the setting of its parameters, therefore this paper focuses on a Quantum Inspired Genetic Algorithm (QIGA) and develops and evaluates adaptive strategies for the same. QIGA adapts ideas of Q-bits, superposition of Q-bits from quantum computing. The effectiveness and the applicability of adaptive QIGA is demonstrated by experimental results on the benchmark Knapsack, Maxcut and Onemax combinatorial optimization problems. The results show that adaptive QIGA is superior to QIGAs.

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Index Terms

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Keywords

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