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Abstract

With the increasing use of computers in research contributions, added need for faster processing has become an essential necessity. Parallel Processing refers to the concept of running tasks that can be run simultaneously on several processors. There are conditions that tasks have deadlines for scheduling. Therefore, the tasks should be scheduled before deadlines. May number of tasks before scheduling reached their deadline, Therefore, these tasks lost. These conditions are unavoidable. Thus, parallel multi-processor system tasks should be scheduled in a way, minimizing lost tasks. On the other hand, achieving good response times is necessary. this is an NP-Complete problem. In this article, we introduce a method based on genetic algorithms for scheduling tasks on parallel heterogeneous multi-processor systems for tasks with deadlines. The results of the simulations indicate reduced number of lost tasks in comparison with the LPT and SPT algorithms. Moreover, the response time of the proposed method due to its number of processing tasks, is appropriate, in comparison with the algorithm LPT and SPT.

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Computer Science

Index Terms

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Keywords

Parallel Heterogeneous Multi-processor Systems Genetic Algorithm Deadline
Lost Tasks