

عنوان مقاله:

An Improved Adaptive Genetic Algorithm for Job Scheduling Problem on Parallel Robots

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خلاصه مقاله:

Minimizing mean tardiness by Job scheduling on parallel robots is very important in the scheduling domain. In this problem, there is a series of n -number independent jobs which are ready to be scheduled at the time of zero. Corresponding to each work, the processing time and duration date are determined. The aim of this approach is to find the order of jobs on the robots for minimizing the mean tardiness. This problem is in the class of NP-Hard combinational problems. Genetic algorithm is well known an effective tool for solving combinational optimization problems. In this study, an adaptive nonlinear genetic algorithm as well as two heuristic crossover and mutation operators are used. In the algorithm, there is a fitness function based on the mean tardiness. Therefore, the algorithm which can make the crossover and mutation probability adjusted adaptively and nonlinearly can avoid disadvantage such as premature convergence, low convergence speed and low stability. Experimental results demonstrate that the proposed genetic algorithm does not get stuck at a local optimum easily and yet it converges fast and is simple to implement.

کلمات کلیدی:

Parallel Robots Scheduling, en, Genetic Algorithm, Mean Tardiness

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