An Optimization Algorithm for Optimal Problem of Permutation Flow Shop Scheduling

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 173
Number 2

Year of Publication: 2017

Authors:
Abdel Nasser H. Zaied, Mahmoud M. Ismail, Shima S. Mohamed

10.5120/ijca2017915256

Abstract

Nowadays the permutation flow shop scheduling problems become one of the most important problems in scheduling field. In this paper whale optimization algorithm was modified for solving PFSP. WOA is new meta-heuristic was proposed by Sayedali and Andrew in 2016 that was inspired from the nature of humpback whales movements in hunting prey. The modification is depending on two stages: firstly; WOA algorithm is converted to discrete algorithm to deal with PFSP; secondly; the mutation permutation strategy was used to improve the results of WOA. The modified algorithm is implemented on MATLAB workspace. The modified algorithm is tested with various benchmark datasets available for flow shop scheduling. The statistical results prove that the modified algorithm (MWOA) is competent and efficient for solving flow shop problems.

References
An Optimization Algorithm for Optimal Problem of Permutation Flow Shop Scheduling


Index Terms

Computer Science

Algorithms

Keywords

Permutation flow shop scheduling problem, Whale Optimization Algorithm, meta-heuristic algorithm, MWOA.