Solving multi-task optimization problems using the sine cosine algorithm

Zamli, Kamal Z., Abdul Kader, Md.
Faculty of Computing, College of Computing and Applied Sciences, Universiti Malaysia Pahang, Pekan, Pahang, 26600, Malaysia

ABSTRACT
Optimization problems relate to the problem of finding minimum or maximum values from a large pools of solutions whereby exhaustive search is practically impossible. Often, optimization problems are solved using metaheuristic algorithms which provide good enough solution within reasonable execution time and limited resources. Recently, much research focus in the literature is devoted on a new kind of optimization problem, called multi-task optimization (MTO). This paper highlights our on-going work dealing with MTO problem. More precisely, our work investigates the adoption of partitioned population based on Sine Cosine algorithm for dealing with MTO problem. We took the team formation problem from IMDB dataset as our case study based on two objectives, minimizing team costs and team load distribution.

KEYWORDS
Sine cosine algorithm; Multi-task optimization

ACKNOWLEDGMENTS

The work reported in this paper is funded by the Malaysian Technical University Network (MTUN) Research Grant from the Ministry of Higher Education Malaysia titled: The Development of T-Way Test Generation Tool for Combinatorial Testing (Grant No: UIC19102).