Examining the Performance of Three Multiobjective Evolutionary Algorithms Based on Benchmarking Problems

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Abstract : The objective of this study is to examine the performance of three well-known multiobjective evolutionary algorithms for solving optimization problems. The first algorithm is the Non-dominated Sorting Genetic Algorithm-II (NSGA-II), the second one is the Strength Pareto Evolutionary Algorithm 2 (SPEA-2), and the third one is the Multiobjective Evolutionary Algorithms based on decomposition (MOEA/D). The examined multiobjective algorithms are analyzed and tested on the ZDT set of test functions by three performance metrics. The results indicate that the NSGA-II performs better than the other two algorithms based on three performance metrics.

Keywords : MOEAs, multiobjective optimization, ZDT test functions, evolutionary algorithms

Conference Title : ICIST 2017 : International Conference on Intelligent Systems and Technologies

Conference Location : New York, United States

Conference Dates : June 04-05, 2017