عنوان مقاله:

(An Archive-based Steady-State Fuzzy Differential Evolutionary Algorithm for Data Clustering (ASFDEaDC

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خلاصه مقاله:

In the current paper, we have assimilated fuzzy techniques and optimization techniques, namely differential evolution, to put forward a modern archive-based fuzzy evolutionary algorithm for multi-objective optimization using clustering. The current work account for the application of a cluster associated approach. Specific quantitative cluster validity measures, i.e., J-measure and Xie-Beni, have been referenced to carry out the appropriate partitioning. The proposed algorithm introduces a new form of strategy which attempts to benefit the feasible search domain of the algorithm by minimizing the analysis and exploration of less beneficial search scope. This clustering method yields a group of trade-off solutions on the ultimate optimal pare to front. Eventually, these solutions are united and maintained in an archive for further evaluation. The current work summarizes and organizes an archive concerned with excellent and diversified solutions in an effort to outline comprehensive non-dominated solutions. The degree of efficiency is revealed with respect to partitioning on gene expression and real-life datasets. The proposed algorithm seeks to reduce the function assessment analysis and maintains a very small working population size. The effectiveness of the .proposed method is presented in comparison with some state-of-art methods

کلمات کلیدی:

Multi-objective optimization, Clustering, Differential Evolution, Evolutionary algorithm, Euclidean based distance, Gene expression data