

A review : accuracy optimization in clustering ensembles using genetic algorithms.

Abstract

The clustering ensemble has emerged as a prominent method for improving robustness, stability, and accuracy of unsupervised classification solutions. It combines multiple partitions generated by different clustering algorithms into a single clustering solution. Genetic algorithms are known as methods with high ability to solve optimization problems including clustering. To date, significant progress has been contributed to find consensus clustering that will yield better results than existing clustering. This paper presents a survey of genetic algorithms designed for clustering ensembles. It begins with the introduction of clustering ensembles and clustering ensemble algorithms. Subsequently, this paper describes a number of suggested genetic-guided clustering ensemble algorithms, in particular the genotypes, fitness functions, and genetic operations. Next, clustering accuracies among the genetic-guided clustering ensemble algorithms is compared. This paper concludes that using genetic algorithms in clustering ensemble improves the clustering accuracy and addresses open questions subject to future research.

Keyword: Accuracy; Clustering ensemble; Genetic algorithms; Unsupervised classification.