Hierarchical Clustering Analysis Based on Grey Relation Grade

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Abstract

A new data clustering method is proposed to have some useful information in a pile of data those characters are unknown. The new data clustering method called a hierarchical grey clustering analysis is developed that need not to determine the threshold, the number of cluster, the choice of initial cluster centers and do entire comparison. In addition, for classifying data, the similar data are belonging to same group. The measurement for similarity is a globalized modified grey relation grade instead of traditional distances. The similar data with highest degree of grey relation grade are combined into the same group. Thus, decision-makers can use a tree diagram to make an appropriate decision to classify without re-computation. Hierarchical grey clustering analysis is distinguished by simplicity, effectiveness, and flexibility.

Keywords: Hierarchical Grey Clustering Analysis, Grey Relation Grade.