

基于自适应权重的 RFCM 聚类算法

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摘 要: 提出了基于自适应权重的 RFCM 聚类算法, 主要思路是在每一次迭代中, 根据每个对象与聚类中心欧式距离不同, 选择改进的正半轴反余切函数对欧式距离进行重新分布后确定均衡因子, 通过均衡因子动态地调节固定权重获得自适应权重, 进而运行 RFCM 算法. 最后, 基于人工和 UCI 数据集的仿真验证了所提算法的有效性, 并应用于雷达信号分选, 验证了所提算法的实用性.

关键词: 聚类; 自适应; 权重; 粗糙集; 模糊集; 均衡因子

Rough Fuzzy C-Means Clustering Algorithm Based on Self-adaptive Weights

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Abstract: This paper proposed RFCM clustering algorithm based on self-adaptive weights. According to different distance between every data object and clustering center, using improved arc cotangent function to redistribute the distance, acquiring adaptive weights through the equivalence factor in each iteration, then carrying out RFCM clustering algorithm. The simulations are performed on synthetic and UCI data sets, and the results show the validity of the proposed algorithm. Furthermore, the proposed algorithm is applied in sorting radar signal, and the results show the practicability of the proposed algorithm.

Key words: clustering; self-adaptive; weights; rough set; fuzzy set; equivalence factor

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