

# 基于布谷鸟搜索改进的聚类算法

孙伟鹏<sup>1</sup>, 孟斌<sup>2</sup>, 吴锡生<sup>1</sup>

(<sup>1</sup> 江南大学 物联网工程学院, 江苏 无锡 214122;

<sup>2</sup> 中船重工集团第七〇二研究所 软件工程中心, 江苏 无锡 214082)

**摘要:** 在分析 K-均值算法和布谷鸟搜索 (CS) 算法的基础上, 本文提出了一种基于改进布谷鸟搜索算法的聚类算法. 该算法将局部搜索能力强的 K-均值算法和全局搜索能力强的布谷鸟搜索算法相结合. 既提高了布谷鸟搜索算法的局部搜索能力, 加快了收敛速度. 同时因为布谷鸟搜索算法具有较强的全局搜索能力, 有效地防止了早熟收敛现象的发生, 因此可以有效地获得全局最优解. 实验表明该聚类算法有更好的收敛效果.

**关键词:** 聚类; k-means 算法; 布谷鸟搜索算法; 收敛速度; 全局最优

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## Improved Clustering Algorithm Based on Cuckoo Search

SUN Wei-peng<sup>1</sup>, MENG bin<sup>2</sup>, WU Xi-sheng<sup>1</sup>

(<sup>1</sup> School of IoT Engineering, Jiangnan University, Wuxi 214122, China; <sup>2</sup> Software Engineering Center, China Shipbuilding Industry Group No.702 Institute, Wuxi 214082, China)

**Abstract:** Based on the analysis of K-means algorithm and cuckoo search (CS) algorithm, this paper proposes a clustering algorithm based on improved cuckoo search algorithm. The algorithm combines the strong local search ability provided by K-means algorithm with the strong global search ability provided by improved cuckoo search algorithm. Which not only improves the local search ability of the cuckoo search algorithm, but also accelerates the convergence rate. At the same time, because the cuckoo search algorithm has strong global search ability, it can effectively prevent the premature convergence phenomenon, so it can effectively achieve the global optimal result. Experiments show that the clustering algorithm has a better convergence effect.

**Key words:** clustering; k-means; cuckoo search algorithm; convergence speed; global optimal

**作者简介:**

孙伟鹏男, (1990-), 硕士研究生. 研究方向为聚类分析、数据挖掘. E-mail: sunwp244372610@163.com.

孟斌男, (1980-), 高级工程师. 研究方向为数据挖掘.

吴锡生男, (1959-), 博士, 硕士生导师. 研究方向为聚类分析、数据挖掘、模式识别.