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Author: Hui Wang Wenjun Wang Laizhong Cui Hui Sun Jia Zhao Yun Wang Yu Xue



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A Hybrid Multi-Objective Firefly Algorithm for Big Data Optimization

Hui Wang^{a,b}, Wenjun Wang^c, Laizhong Cui^{d,*}, Hui Sun^{a,b}, Jia Zhao^{a,b}, Yun Wang^{a,b},
Yu Xue^e

^a*Jiangxi Province Key Laboratory of Water Information Cooperative Sensing and Intelligent Processing, Nanchang Institute of Technology, Nanchang 330099, China*

^b*School of Information Engineering, Nanchang Institute of Technology, Nanchang 330099, China*

^c*School of Business Administration, Nanchang Institute of Technology, Nanchang 330099, China*

^d*College of Computer Science and Software Engineering, Shenzhen University, Shenzhen 518060, China*

^e*School of Computer and Software, Nanjing University of Information Science and Technology, Nanjing 210044, China*

Abstract

Multi-objective evolutionary algorithms (MOEAs) have shown good performance on many benchmark and real world multi-objective optimization problems. However, MOEAs may suffer from some difficulties when solving big data optimization problems with thousands of variables. Firefly algorithm (FA) is a new meta-heuristic, which has been proved to be a good optimization tool. In this paper, we present a hybrid multi-objective FA (HMOFA) for big data optimization. A set of big data optimization problems, including six single objective problems and six multi-objective problems, are tested in the experiments. Computational results show that HMOFA achieves promising performance on all test problems.

Keywords: Firefly algorithm (FA), multi-objective firefly algorithm, multi-objective optimization, big data optimization

1. Introduction

Big data is a term for data sets that are so large and complex that it becomes very difficult to process by using traditional data processing applications [1]. It is known

*Corresponding author

Email addresses: huiwang@whu.edu.cn (Hui Wang), wangwenjun881@126.com (Wenjun Wang), cui1z@szu.edu.cn (Laizhong Cui), sun_hui2006@163.com (Hui Sun), zhaojia925@163.com (Jia Zhao), wangyun@nit.edu.cn (Yun Wang), xueyu_123@nuaa.edu.cn (Yu Xue)

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