基于改进乌鸦搜索算法的云计算任务调度研究

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摘　要：提出了一种以云任务的完成时间和成本为优化目标的改进乌鸦搜索算法（IMCSA）的任务调度方法.首先采用反向学习初始化种群，在选择被跟踪乌鸦时根据记忆的适应度值择优选取，避免了盲目性；其次在位置更新过程中，将乌鸦的位置与其反向学习得到的位置进行交叉，择优选取，能够有效提高收敛速度.最后通过 CloudSim 平台与粒子群算法、遗传算法、Min_Min 算法和 CSA 进行对比，结果表明 IMCSA 在不同实验下，在任务完成时间和成本取得的效果均优于对比算法.

关键词：云计算；乌鸦搜索算法；任务调度

Research on cloud computing task scheduling based on improved crow search algorithm

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Abstract： A task scheduling method based on the improved crow search algorithm (IMCSA) is proposed， which take cloud task completion time and cost as the optimization goal. Firstly， the initial population was generated by opposition-based learning， and the preferred value was selected according to the fitness value of memory when selecting the tracked crow. That can avoid blindness. Secondly， to effectively improve the convergence speed， the position of crow was crossed with the position obtained by opposition-based learning and chose the better position during the position update process. Finally， compared with particle swarm optimization， genetic algorithm， Min_Min algorithm and CSA under the CloudSim. The experimental show that the algorithm is superior to the contrast algorithm at the task completion time and cost under different experiments.

Key words： cloud computing; crow search algorithm; task scheduling

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