

融合类无标度粒子群算法的图像检索研究

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摘要: 提出一种融合类无标度网的禁忌粒子群(ST-PSO)算法,并用其优化改进后的图像检索相关反馈过程.该方法通过融合类无标度网的禁忌粒子群算法优化反馈过程,并根据用户的反馈信息引入分辨率来动态调整特征权重以及查询向量.通过实验验证了该方法能够增加粒子种群多样性,避免早熟收敛,增强粒子跳出局部最优解的能力,并且可以检索到更加符合用户需求的图片,有效地提高了检索效率和检索精度.

关键词: 粒子群算法; 无标度网; 图像检索; 特征权重; 相关反馈

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Research on Image Retrieval Based on Fusion the Scale

Free Particle Swarm Optimization

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Abstract: This paper propose a Tabu search particle swarm algorithm which fusions the Scale Free Like network to optimize the improved image retrieval relevance feedback. This method optimizes the feedback process by the Tabu search particle swarm algorithm which fusions the Scale Free Like network and lead into resolution ratio through user's feedback information to adjust the feature weight and the query vector dynamically. Experiment shows that the method can not only increase the diversity of particle population, avoid premature convergence, enhance the ability of particle to jump out of local optimal solution, but also retrieve pictures that more user-friendly, effectively improved the retrieval efficiency and retrieval accuracy.

Key words: particle swarm optimization algorithm; the scale free network; image retrieval; feature weight; relevance feedback

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