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基于AHP的跟踪算法性能评价研究(PDF)

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Title: Performance Evaluation for Tracking Algorithm Based on AHP

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摘要: 针对跟踪算法评价方法不够健全的问题,文中提出了基于AHP法的跟踪算法评价方法。主要从跟踪算法的跟踪准确度、算法的实时性以及算法的硬件可实现性这三个指标考虑了算法性能的评价问题,讨论了三个指标量化和规范的方法,运用AHP法给出了计算各个指标的权重和综合评价分数的方法。最后采用4种典型的跟踪算法和实际拍摄的红外图像序列进行了小目标的跟踪实验,并根据实验得到的数据计算了算法的评价分数,结果表明了文中跟踪算法评价方法的合理性。

Abstract: According to imperfectness of performance evaluation for tracking algorithm, a method of evaluation for tracking algorithm based on AHP was proposed. As for the evaluation, three parameters including veracity, real-time demand and the implementation on hardware of the tracking algorithm were mainly considered, and then the method for quantizing and regulating the three parameters was also discussed here. AHP was adopted to calculate the weight of the three parameters and the complete score of the evaluation. Finally, the small target tracking experiments were made by 4 typical small target tracking algorithms and 3 real IR images series, and the evaluation score of the algorithms were also calculated according to the experiment results. The results verify the rationality of the method of evaluation.

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