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信息融合图像识别算法及其在三维飞机图像识别中的应用研究

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Information Fusion Image Recognition Algorithm and Applications in Three Dimension Airplane Image Recognition

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摘要

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摘要 将D-S证据推理与不变矩理论相结合,提出了信息融合图像识别算法,并应用于三维飞机图像的识别。构造了基本置信指派函数,建立了分类规则,针对Dempster组合规则只适用于高置信度、低冲突性的情况,应用可解决证据冲突的加权分配冲突法及吸收法,完成了三维飞机图像识别的仿真,比较了3种组合规则的识别效果,结果表明吸收法识别率最高。

关键词: D-S证据推理 不变矩 信息融合图像识别算法 三维飞机图像的识别 组合规则

Abstract: By combining Dempster-Shafer evidence reasoning with invariant moment theory, an information fusion image recognition algorithm is presented, and the algorithm is applied to three dimension airplane image recognition. A basic belief assignment function is constructed, and a classifying rule is built. In order to solve the problem in which Dempster combination rule is used only in case of high belief degree and low conflict, the weighed distribution conflict and the absorptive method are used for solving evidence conflict. The result of three dimension airplane image recognition simulation indicates that the absorptive method has the highest recognition efficiency in three combination rule.

Keywords: Dempster-Shafer evidence reasoning invariant moment information fusion image recognition algorithm three dimension airplane image recognition combination rule

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