

论文与报告

基于模型的三维物体识别

林应强, 吴立德

复旦大学计算机科学系, 上海

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摘要

实现了一个完整的基于模型的三维物体识别系统, 它可识别灰度图象中包含的物体, 如对遮挡加以限制, 还可识别被遮挡的物体. 该系统能实现物体的自动建模, 也可先定性识别某一物体的立体图对以获取高层知识, 然后在高层知识的指导下准确地匹配立体图对中相对应的特征. 此外, 还提出了利用最能表示物体特征的表面(特征面)来识别物体的方法, 以提高系统抗噪声的能力. 大量实验证明, 该系统具有相当的稳健性.

关键词 [三维物体识别](#) [关系属性图](#) [特征面](#) [特征面匹配](#) [立体对应](#)

分类号

Model Based 3-D Object Recognition

Lin Yingqiang, Wu Lide

Computer Science Department, Fudan Univ., Shanghai

Abstract

A model based 3-D object recognition system is realized. The system can extract the relational face-graph of the object in the original image, then by matching the relational face-graph with the one in the model base, the system can recognize what kind of object is in the image. If the stereo images of one scene are given, the system can accurately establish the correspondence between the two images using higher level knowledge about the scene. In addition, the characteristic-matching method has been proposed. The main idea of this method is to recognize the object by using the faces which can best represent the characteristics of the object. The robustness of the system has been proven by experiments.

Key words [3-D object recognition](#) [relational face-graph](#) [characteristic face](#) [characteristic face matching](#) [3-D correspondence](#)

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通讯作者

作者个人主页 林应强; 吴立德

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