On Recognition of 3-D Objects from 2-D Images (Classic Reprint)

By Yehezkel Lamdan

Forgotten Books, United States, 2015. Paperback. Book Condition: New. 229 x 152 mm. Language: English . Brand New Book ***** Print on Demand *****.Excerpt from On Recognition of 3-D Objects From 2-D Images Abstract We describe new techniques for model-based recognition of 3-D objects from unknown viewpoints using single gray scale images. The objects in the scene may be overlapping and partially occluded. An efficient matching algorithm, which assumes affine approximation to the perspective viewing transformation, is proposed. The algorithm has an off-line model preprocessing phase and a recognition phase to reduce matching complexity. The algorithm was successfully tested in recognition of flat industrial objects appearing in composite occluded scenes. 1. Introduction. Recognition of industrial parts and their location in a factory environment is a major task in robot vision. Most industrial part recognition systems are model-based systems (see a survey in [C-D]). The model based approach is well suited for an industrial environment, since the objects processed by the robot are usually known in advance, and belong to a certain subset of the factory s tools and products. We discuss the object recognition problem, where the robot is faced with a composite scene of overlapping parts (thus partially occluding...

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