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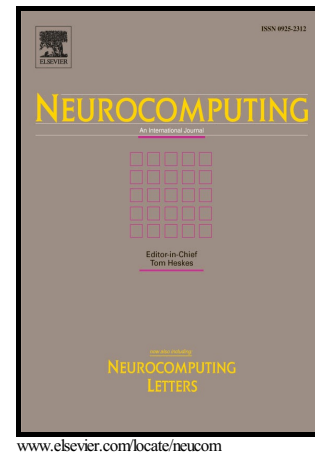
Saliency detection via joint modeling global shape and local consistency

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Saliency detection via joint modeling global shape and local consistency

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Abstract

Saliency detection is the task of locating informative regions in an image, which is a challenging task in computer vision. In contrast to the existing saliency detection models that focus on either local or global image property, an effective salient object detection method is introduced based on joint modeling global shape and local consistency. To this end, Restricted Boltzmann Machine (RBM) is utilized to model salient object shape as global image property and Conditional Random Field (CRF), on the other hand, is adopted to achieve its local consistency. In order to obtain the final saliency map, a universal framework is introduced to combine the results of RBM and CRF. Experimental results on five benchmark datasets demonstrate that the proposed saliency detection method performs favorably against the existing state-of-the-art algorithms.

Keywords: saliency detection, joint modeling, object shape, local consistency

1. Introduction

Humans have the ability to quickly and accurately locate the most interesting regions in complex scenes. In computer vision, researchers try to mark the most salient pixels in an image by computers to simulate human visual system, which is called visual saliency detection. Visual saliency detection is a fundamental problem in neuroscience and computer vision, and it plays an important role in image