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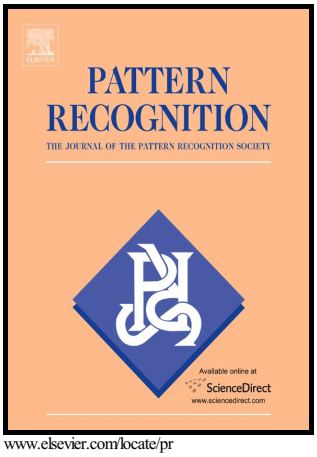

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A novel graph-based optimization framework for salient object detection

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Abstract

In traditional graph-based optimization framework for salient object detection, an image is over-segmented into superpixels and mapped to one single graph. The saliency value of each superpixel is then computed based on the similarity between connected nodes and the saliency related queries. When applying the traditional graph-based optimization framework to the salient object detection problem in natural scene images, we observe at least two limitations: only one graph is employed to describe the information contained in an image and no cognitive property about visual saliency is explicitly modeled in the optimization framework. In this work, we propose a novel graph-based optimization framework for salient object detection. Firstly, we employ multiple graphs in our optimization framework. A natural scene image is usually complex, employing multiple graphs from different image properties can better describe the complex information contained in the image. Secondly, we model one popular cognitive property about visual saliency (visual rarity) in our graph-based optimization framework, making this framework more suitable for saliency detection problem. Specifically, we add a regularization term to constrain the saliency value

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