Saliency Detection Using a Background Probability Model

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Abstract : Image saliency detection has been long studied, while several challenging problems are still unsolved, such as detecting saliency inaccurately in complex scenes or suppressing salient objects in the image borders. In this paper, we propose a new saliency detection algorithm in order to solving these problems. We represent the image as a graph with superixels as nodes. By considering appearance similarity between the boundary and the background, the proposed method chooses non-saliency boundary nodes as background priors to construct the background probability model. The probability that each node belongs to the model is computed, which measures its similarity with backgrounds. Thus we can calculate saliency by the transformed probability as a metric. We compare our algorithm with ten-state-of-the-art salient detection methods on the public database. Experimental results show that our simple and effective approach can attack those challenging problems that had been baffling in image saliency detection.

Keywords : visual saliency, background probability, boundary knowledge, background priors
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