Visual Object Tracking using Sparse Representation and Interest Points in a Double Step Approach

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Abstract

Nowadays, various approaches have been proposed for visual target tracking, amongst which the sparse representation-based approaches have shown efficiency. In this paper, a two-stage approach for visual target tracking is proposed. In the first stage, the approximate target position is determined based on the corner points and sparse representation. In the following, the appearance model memory of the target will be used to determine the exact location of the target to perform the target localization accurately. Experimental results demonstrate that the proposed approach can effectively handle challenges such as abrupt illumination variation, occlusion, and blurriness. Furthermore, based on the evaluations of the qualitative and quantitative results, the proposed algorithm is comparable in performance with other state-of-the-art algorithms.

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Index Terms

Computer Science Image Processing
Keywords

Visual Tracking, Sparse Representation, Interest Point, Target Template, Memory Model