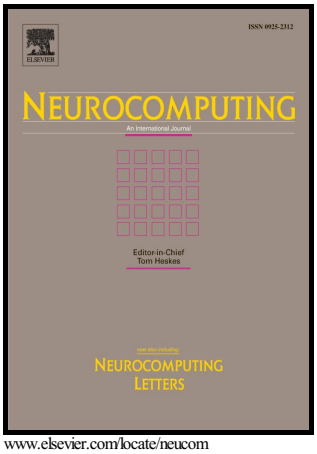

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Robust visual tracking via patch based kernel correlation filters with adaptive multiple feature ensemble

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Abstract

Both patch based and correlation filter-based tracking methods have achieved competitive results on accuracy and robustness, but there is still a large room to improve their overall performance if carefully dealing with the challenging factors in visual tracking. In this paper, we present a patch based tracker which adaptively integrates the kernel correlation filters with multiple effective features. To take full advantage of the useful information from different parts of the target, we train each template patch by kernel correlation filtering method, and adaptively set the weight of each patch for each particle in a particle filtering framework. Experiments illustrate that this scheme can effectively handle the occlusion problem. Moreover, the effective features including the HOG features and color name features are effectively integrated to learn the correlations between the target and background, the candidate patches and template ones, which further boosts the overall performance. Extensive experimental results on the CVPR2013 tracking benchmark demonstrate the proposed approach performs favorably against some representative state-of-the-art tracking algorithms.

Keywords:
correlation filters, visual tracking, particle filters,

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