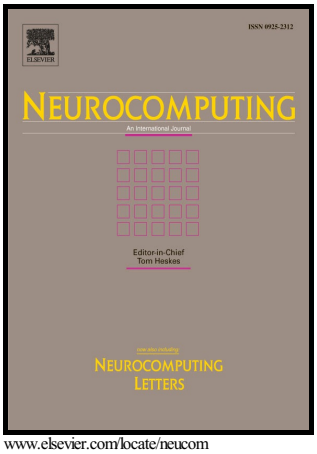

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PII: S0925-2312(16)30611-7
DOI: http://dx.doi.org/10.1016/j.neucom.2015.11.130
Reference: NEUCOM17223

To appear in: *Neurocomputing*

Received date: 1 September 2015
Revised date: 17 November 2015
Accepted date: 18 November 2015

Cite this article as: Huanqiang Zeng, Jing Chen, Xiaolin Cui, Canhui Cai an Kai-Kuang Ma, Quad Binary Pattern and Its Application in Mean-Shift Tracking *Neurocomputing,* http://dx.doi.org/10.1016/j.neucom.2015.11.130

Quad Binary Pattern and Its Application in Mean-Shift Tracking

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Abstract

This paper proposes a new local texture descriptor, called *quad binary pattern* (QBP). Compared with *local binary pattern* (LBP), the QBP is with stronger robustness for feature extraction under complex scene (e.g., luminance change, similar target and background color) and with lower computational complexity. To demonstrate its effectiveness, the proposed QBP is further applied on the mean-shift tracking, in which a joint color-QBP model is developed to effectively represent the color and texture characteristics of the target region. Extensive simulation results have demonstrated that the proposed algorithm is able to improve the tracking speed and accuracy, compared with the standard mean-shift tracking and joint color-LBP model based mean-shift tracking.

Keywords: Target tracking, quad binary pattern, mean-shift tracking, joint color-QBP model, feature extraction

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