



NOVEL SVDD-BASED ALGORITHM FOR MOVING OBJECT DETECTING AND TRACKING UNDER DYNAMIC SCENES

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Abstract- Object detecting and tracking is an important technique used in diverse applications of machine vision, and has made great progress with the prevalence of artificial intelligence technology, among which the detecting and tracking moving object under dynamic scenes is more challenging for high requirements on real-time performance and reliability. Essentially analyzing, object detecting and tracking need to classify the objects and background into two different categories according to different features, where the detecting and tracking drift caused by noisy background can be effectively handled by robust maximum margin classifier, such as one-class SVM. But the time and space complexities of traditional one-class SVM methods tend to be high, which limits its wide applications to various fields. Inspired by the idea proposed by Support Vector Data Description (SVDD), in this paper we present a novel SVDD-based algorithm to efficiently deal with detecting and tracking moving object under dynamic scenes. The experimental results on synthetic, benchmark data and real-world videos demonstrate the competitive performances of the proposed method.

Index terms: Machine vision, moving object, object detecting and tracking, dynamic scene, support vector data description.