

Particle Filter Based On Joint Color Texture Histogram For Object Tracking

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Abstract— Particle filter has grown to be a standard tool for solving visual tracking problems in real world applications. One of the critical tasks in object tracking is the tracking of fast-moving objects in complex environments, which contain cluttered background and scale change. In this paper, a new tracking algorithm is presented by using the joint color texture histogram to represent a target and then applying it to particle filter algorithm called PFJCTH. The texture features of the object are extracted by using the local binary pattern (LBP) technique to represent the object. The proposed algorithm extracts effectively the edge and corner features in the target region, which characterize better and represent more robustly the target. The experiments showed that this new proposed algorithm produces excellent tracking results and outperforms other tracking algorithms.

Keywords— *Object tracking; Particle filter; Local binary pattern; Color histogram.*