



FOREGROUND DETECTION IN SURVEILLANCE VIDEOS VIA A HYBRID LOCAL TEXTURE BASED METHOD

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Abstract- Foreground detection is a basic but challenging task in computer vision. In this paper, a novel hybrid local texture based method is presented to model the background for complex scenarios and an image segmentation based denoising processing is applied to reduce noise. We combine the uniform pattern of eXtended Center-Symmetric Local Binary Pattern (XCS-LBP) and Center-Symmetric Local Derivative Pattern (CS-LDP) to generate a discriminative feature with shorter histogram. Retaining the strengths of the two textures, it appears to be robust to dynamic scenes, illumination changes and noise. Based on the hybrid feature, we employ an overlapping block based Gaussian Mixture Model (GMM) framework which makes classifying decision in pixel level. Experimental results on two changeling datasets (Wallflower and I2R dataset) clearly justify the performance of proposed method. Besides, we take the foreground masks obtained by proposed method as input to a tracking system showing notable results.

Index terms: Foreground detection, background modeling, derivations of local binary pattern.