A texture descriptor: BackGround Local Binary Pattern (BGLBP)

ABSTRACT

Local Binary Pattern (LBP) is invariant to the monotonic changes in the grey scale domain. This property enables LBP to present a texture descriptor being useful in applications dealing with the local illumination changes. However, the existing versions of LBP are not able to handle image illumination changes, especially in outdoor environments. The non-patterned illumination changes disturb performance of the background extraction methods. In this paper, an extended version of LBP which is called BackGround LBP (BGLBP) is presented. BGLBP is designed for the background extraction application but it is extendable to the other areas as a texture descriptor. BGLBP is an extension of D-LBP, Centre-Symmetric LBP, ULBP, and R-LBP and it has been designed to inherit the positive properties of previous versions. The performance of BGLBP as a part of background extraction method is investigated. In addition, a comparison between BGLBP as a general texture descriptor and a number of LBP versions is conducted.

Keywords: LBP; Texture descriptor; Background extraction; Moving detection