Abstract

The local binary pattern (LBP) provides a simple and efficient approach to gray-scale and rotation invariant texture classification. However, the LBP operator thresholds P neighbors at the value of the center pixel in a local neighborhood and employs a P-bit binary pattern to encode only the signs of the differences between the gray values. Thus, the LBP operator
discards some important texture information. In this paper, we have proposed the compound
local binary pattern (CLBP), an extension of the LBP texture operator for rotation invariant
texture classification. The CLBP operator exploits 2P bits to encode the information of a local
neighborhood of P neighbors, where the extra P bits are used to express the magnitude
information of the differences between the center and the neighbor gray values. A feature
representation method based on CLBP codes is presented. Experimental results show that, the
classification rate of the proposed method is appreciable.

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**Index Terms**

Computer Science Pattern Recognition

**Key words**

- Compound local binary pattern
- Local binary pattern
- Support vector machine
- Texture classification
- Brodatz album