

# HSV-based Color Texture Image Classification using Wavelet Transform and Motif Patterns

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**Abstract.** In this paper, a novel color texture image classification based on HSV color space, wavelet transform, and motif patterns is introduced. Traditionally, RGB color space is widely used in digital images and hardware. However, RGB color space is not accurate in human visual perception and statistical analysis. Therefore, HSV color space is applied to obtain more accurate color statistics for extracting features. Due to extracting texture features in color texture images, wavelet transform and motif co-occurrence matrix are used in HSV color space for feature extraction. According to characteristic of wavelet transform, the horizontal, vertical and diagonal distributions are presented in sub-bands of a transformed image. Then, texture features of the horizontal, vertical and diagonal sub-bands are extracted by the motif co-occurrence matrix. After feature extraction, support vector machine (SVM) is applied to learn and classify texture classes by the extracted features. From experimental results, the proposed method is better and more correct than recent RGB-based color texture image classification.

**Keywords:** HSV color space; texture classification; wavelet transform; motif patterns; co-occurrence matrix; Support vector machine

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