Hybrid Image Compression Scheme Based on PVQ and EVQ

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ABSTRACT

The image compression is used to vector quantization. It has not considered the relation between the image blocks, so we could be able to improve the bit rate. In this paper, we propose a predicted coding scheme based on VQ algorithm, prediction algorithm, and error VQ algorithm. The prediction algorithm is used to encode smooth blocks. Otherwise VQ and EVQ are used to encode edge blocks, respectively. The scheme not only improves the image quality of decompressed but also has low bit rate than VQ algorithm. The experimental results show that our scheme performs better than VQ algorithm. For example, the test image “ Lena ” achieves 35.02 dB of reconstructed image quality at 0.87 bpp. And “ Lena ” achieves 31.07 dB of reconstructed image quality at 0.31 bpp than VQ algorithm high 0.71 dB at 0.625 bpp. It is obvious that our proposed PVQ-EVQ scheme not only has high compression rate, but also has good reconstructed images quality.

Keywords : VQ, Prediction, Hybrid image coding, PSNR

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