Image compression with a human touch

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ABSTRACT.

Compression is very important for multimedia applications, because it reduces the amount of space for depositing the information, and the bandwidth required for sending it through a computer network. Multiresolution analysis performs a wavelet decomposition that decorrelates the signal data, in preparation for the quantization step and the final redundancy reduction. This article presents a simple algorithm for performing the decomposition of images and propounds a quantization method that takes into account the human eye contrast sensitivity function.

REFERENCES

[1] Cosma, O., *Wavelet Transform application in image compression,* Buletinul Ştiinţific al Universităţii din Baia Mare seria B, 2000
[2] Cosma, O., *O metodă de compresie a imaginilor,* Prima conferinţă de matematici aplicate, Baia Mare, 1998
[3] Cosma, O., *Extensions for the Image Broadcasting Protocol*, Buletinul Ştiinţific al Universităţii din Baia Mare seria B, 1997
[4] Cosma, O., *Multimedia,* Univ. de Nord Baia Mare, 2000
[5] ISO/IEC, JPEG 2000 part I, final committee draft version 1.0
[6] Fournier, A., *Wavelets and their Applications in Computer Graphics*, SIGGRAPH Course Notes, University of British Columbia 1995
[7] Walker, S. J., *Fourier Analysis and Wavelet Analysis,* Notice of the AMS, Vol. 44, No. 6
[8] Nadenau, M., *Integration of Human Color Vision Models into High Quality Image Compression,* Ecole Polytechnique Federale de Lausane, 2000
[9] Hilton, L.M., *Compressing Still and Moving Images With Wavelets,* Multimedia Systems, Vol. 2, No. 3, 1994
[10] Stollniz, J. E., *Wavelets for Computer Graphics*, IEEE Computer Garphics and Applications 05. 1995
[11] Graps, A., *An Introduction to Wavelets,* IEEE Computational Science and Engineering, Vol. 2, No. 2, 1995

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