Validation of Image Compression Algorithms using Neural Network

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Abstract

We live in Digital Era where information is generated at rapid space. Images constitute a major part of information. It becomes essential to use image compression techniques in order to reduce storage space and transmission bandwidth. Image compression algorithm can be validated using Neural Network. In this paper various methods of Image compression such as BTC, DCT, DWT are optimized and Validate using neural network. This is achieved by comparing methods based on set of parameters. The resultant compression metrics are calculated and visual quality of image is analyzed. Neural network implementation is done based on two different methods desired matrix and entropy based method. Experimental analysis shows 60 % reduction in storage space requirement and effective optimization using different methodology.

References

5. U. Y. Desai, M. M. Muzuki, B. K. P. Horn “Edge and mean based Compression” MIT Artificial Intelligence Laboratory AI Memo No. 1584, November 1996.
13. and Applications ISSN: 2248-9662, Vol 2 Issue 1 Jan-Feb 2012 pp 515-521
15. Bhavna Sagwan, Mukesh Sharma, Krishan Gupta “RGB based KMB Image Compression Technique” International Conference on Reliability, Optimization and Information Technology Feb 2014

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