Abstract

"Image compression" minimizes the problem that we face in storing and transmitting large amount of data. It reduces the size of data required to represent a digital image. In this procedure, DCT plays an important role. It separates information by using different frequencies. In Discrete Cosine Transformation (DCT), Quantization and encoding are the steps involved in the compression of the JPEG image. In this whole work, while using DCT, we have used Stassen's matrix multiplication algorithm for reducing the complex matrix multiplication problems. As per the result obtained from experiment, the performance of DCT is improved by using Stassen's matrix multiplication algorithm. The performance analysis is carried out through Peak signal to noise ratio (PSNR), and the different compression ratio (CR) for the different images.

References

- Wei Zheng, et al., "Research in a Fast DCT Algorithm Based on JPEG" IEEE,
An Efficient DCT Compression Technique using Strassen’s Matrix Multiplication Algorithm

- Lin Ma, Student Member, Songnan Li, Student, Fan Zhang, and King Ngan, "Reduced-Reference Image Quality Assessment Using Reorganized DCT-Based Image Representation"; IEEE, VOL. 13, NO. 4, AUGUST 2011.
- Ken Cabeen and Peter Gent, "Image Compression and the Discrete Cosine Transform"; Math 45, College of the Redwood.

Index Terms

Computer Science

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Algorithms

Keywords

compression strassen's matrix multiplication CR DCT JPEG PSNR