Video Compression based on Fractal Isosceles Triangular Partition using Hybrid Swarm Intelligence

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Authors:
Shraddha Pandit, Piyush Kumar Shukla, Akhilesh Tiwari

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Abstract

Symmetry property of fractal transforms enriched the compression techniques of digital multi-media data. The major part of multi-media data is video and image. The diverse nature of video required more memory and bandwidth for storage and transmission. For the efficient processing of video needs compression. Isosceles triangular partition (ITP) techniques provide the symmetry of range block and domain blocks in terms of triangular shape not in a rectangle. The triangular shape reduces the process of non-overlapping of blocks and increases quality of video compression in terms of PSNR. Instead of quality improvement of video suffered from the process of compression ratio and process of encoding time of video. The bottleneck problem of isosceles triangular partition is search space and mapping of blocks. For the betterment of search space and mapping of blocks used hybrid swarm intelligence. The hybrid swarm intelligence reduces the search space and increases the efficiency of mapping and increases the compression ratio of video compression. The design algorithms simulated in MATLAB software and used some short duration of video clip and measure some standard parameters such as PSNR, encoding time, compression ratio and MSE. The design algorithm gives better
results instead of isosceles triangular partition.

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