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# Second compression for pixelated images under edge-based compression algorithms: JPEG-LS as an example

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## Abstract

This paper details the examination of a particular case of data compression, where the compression algorithm removes the redundancy from data, which occurs when edge-based compression algorithms compress (previously compressed) pixelated images. The newly created redundancy can be removed

using another round of compression. This work utilized the JPEG-LS as an example of an edge-based compression algorithm for compressing pixelated images. The output of this process was subjected to another round of compression using a more robust but slower compressor (PAQ8f). The compression ratio of the second compression was, on average, 18%, which is high for random data. The results of the second compression were superior to the lossy JPEG. Under the used data set, lossy JPEG needs to sacrifice 10% on average to realize nearly total lossless compression ratios of the two-successive compressions. To generalize the results, fast general-purpose compression algorithms (7z, bz2, and Gzip) were used too.

## Author keywords

Data compression ; lossless; lossy; PAQ8f; Pixelated images

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