Quality Measurement for Pyramid Based Compression Algorithms

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Figure 1: GUI after importing an image

Project

The aim is to compare how a basic gaussian image pyramid compression performs against jpeg compression on different images, and declare the better compression algorithm by comparing the results of various image similarity algorithms. The higher

Pipeline

1. The input image is being imported through a GUI.
2. It will be processed by a gaussian pyramid compression on one hand, and jpeg on the other.
3. These to are then compared through image similarity algorithms, as MSE, PSNR, FSIM, FSIMc, HDR-VDP, and a histogram comparison algorithm.
4. The evaluated results will then be normalized if possible, or carefully ranked between 0 and 1 otherwise (1 being and identical image), and their mean calculated.
5. The output is a GUI showing the input image, the results of both image compressions, and a list with the results of the different image similarity algorithms, following the overall rating.

Results

Resulting GUI shown in image 1.

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