LZW Image Compression

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Introduction

LZW is one of the powerful compression algorithm as it is loss-less and there is no need of transfer of dictionary, only the codes are transferred from encoder and decoder and decoder creates it own dictionary from the codes received. Here the sent codes are not of the standard 1 byte size (8 bits), rather they are customized and can be varied.

The parameters of checking are:

Compression Ratio: The effective ratio by which the number of bits transferred is reduced.

Average Number of bits: It is the average number of bits which are used to transfer the data. It is total number of bits divided by total number of pixels.

The variation of these parameters by changing the block size (multiples of 2) (4 to 158) for this real-world Test Image is as below:

Image resolution is 2400x1600 pixels

The variation of block size on the image keeping codes size as 9:
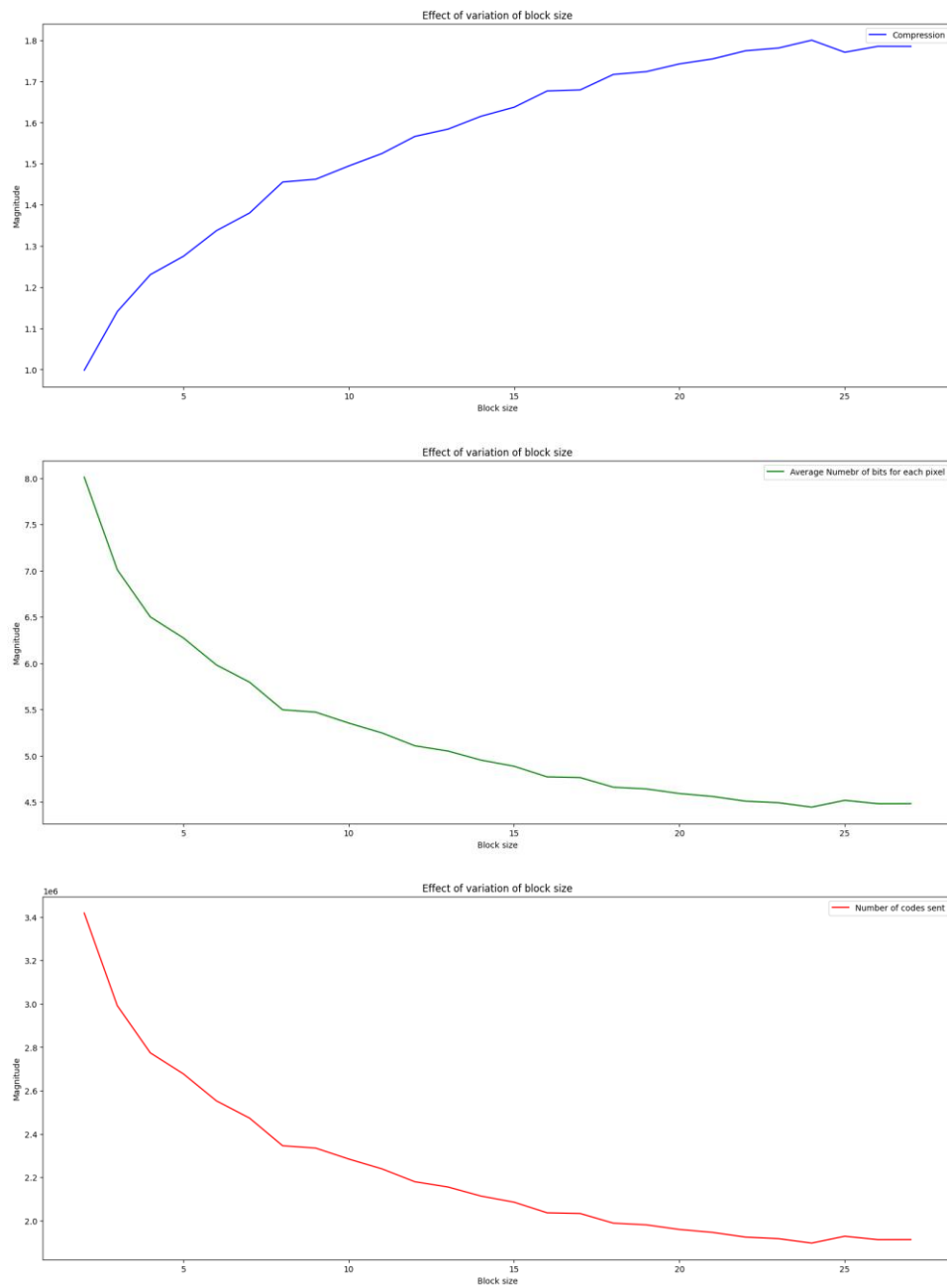
The variation of codes size keeping block size as 8:

Effect of variation of code size

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