Relations between entropy and file size in common image compression algorithms

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1 Introduction

In the digital age, information has taken center stage in most industries across society. Scientific research has moved into an epoch of data-driven analysis, fitting models to increasingly vast and detailed amounts of data. It is estimated that we store a total of 295 exabytes ($295 \cdot 10^9$ gigabytes) across devices, digital and analog. This doesn't even encompass the totality of that information, since a large part of it is stored in a compressed format. In fact, parts of everyday life wouldn't be possible without data compression. Streaming an HD video in real time would require $1920 \cdot 1080 \cdot 3 \cdot 24 = 149.3$ megabytes/s of bandwidth, a far cry from the average internet speed of XXX megabytes/s in Sweden. This report investigates how entropy and storage size change under a few common image compression algorithms, a part of vital video compression algorithms.

2 Method

3 Results

4 Discussion