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ENHANCING IMAGE COMPRESSION

Interim Report by

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Abstract

With the increase demand for storage space across all devices, data compression and relating standards have been receiving the buzz over the last five years. With the advancement of computing power together with the abundance availability of ideal datasets has increased the interests in the application of image processing and deep learning tasks. While the average user may be ready to accept the standard JPEG encoder, a diversified group of users expects a better image compression standard that can preserve more data and preserve a higher colour accuracy while maintaining the same human visual systems with higher space saving. The author of this research has implemented a content aware enabled image compression that will better preserve the image subjects most valuable data while compressing the content around it, with the use of deep learning and convolutional networks. This content aware feature enables to draw a region of interest map around the uncompressed image by including a complete set of features from most classes and after taking the threshold over the sum of all activation functions. The results are tested using the industry standards of MS-SSIM and PSNR values to prove higher visual quality can be preserved while compressing using this approach.

Keywords: Image Compression using CNN, Deep learning and Image Compression, Regions of Interests in Images, RGB Scaling