

Recurrent Neural Network based Image Compression

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Abstract

In this presentation we described and implemented Image

compression using recurrent neural network, the compression of image method is a type of information compression that will decrease the same amount of image to be transmitted, stored and evaluated, but without losing the information content. Here we are compressing image with one of most type of neural network i.e. Recurrent Neural Network (RNN). The architecture consist of recurrent neural network based encoder, binarizer, and decoder system. Using this reconstructed the image which is having better quality than the original image and along with this here we show the activation function i.e. Sigmoid, ReLU and tanh functions. And also we evaluated PSNR, MSE, CR, BPP and SSIM, MS-SSIM, parameters for comparing original and compressed images. For this we are taken selected images on the Kodak dataset images. And this work is performed by using python 3.6 version tool with some standard packages for AI functions. So this can demonstrates that our Deep learning achieves better generalization..

Biography:

Ashwini Kambar graduated from VDIT, India. Her research works include artificial intelligence, Robotics, and big data.

Speaker Publications:

- "Al-Najjar, Yusra AY, and D. Chen Soong. "Comparison of image quality assessment: PSNR, HVS, SSIM, UIQI." International Journal of Scientific & Engineering Research(IJSER), Volume 3, Issue 8, pp.1-5, 2013.
- Hussain, Farhan, and Jechang Jeong. "Exploiting deep neural networks for digital image compression." In 2015 2nd world symposium on web applications and networking (WSWAN), pp. 1-6. IEEE, 2015.
- 3. Hussain, Farhan, and Jechang Jeong. "Efficient deep neural network for digital image compression employing rectified linear neurons." Hindawi Publishing Corporation Journal of Sensors Volume 2016.
- Sharma, Ochin. "A new activation function for deep neural network." In 2019 International Conference on Machine Learning, Big Data, Cloud and Parallel Computing (COMITCon), pp. 84-86. IEEE, 2019.

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