Post-trained Convolution Networks for Single Image Super-resolution (Abstract Reprint)

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Abstract

A new method is proposed to increase the accuracy of the state-of-the-art single image super-resolution (SISR) using novel training procedure. The proposed method, named post-trained convolutional neural network (CNN), is carried out stochastic dual simplex algorithm (SDSA) in the last reconstruction layer. The method utilizes contextual information to update the last reconstruction layer of CNN. The extracted contextual information is projected to the last reconstructed layer by optimized weights and the bias is managed through SDSA. Post-trained CNN is applied to the very deep super-resolution (VDSR) method to show its performance. The quantitative and visual results demonstrate that the proposed post-trained VDSR (PTVDSR) exhibits excellent and competitive performance when compared with the VDSR and other super-resolution methods.

References

Zandavi, S. M. 2023. Post-trained convolution networks for single image super-resolution. *Artificial Intelligence*, 318: 103882.