

The use of vector quantization as a decomposition method for the restoration of the image of faces

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Abstract

Image restoration is defined by estimating an original image from data that has been degraded in some way. Degradation regularly includes blurring the original image and noise distortion. Restoring the original image from degraded observations is of paramount importance and can be applied in several scientific fields, including medicine and diagnostics, military surveillance, satellite and astronomical images, remote sensing, automatic authentication in industry and many other areas. Image restoration provides a good understanding of the image when it undergoes further image processing techniques.

In variety of tools and approaches it is hard to find the proper way of image restoration. This work is an attempt to present of the results, compare of the restoration algorithms and show the advantages of VQ (Vector Quantization) algorithm.

Keywords: vector quantization, image restoration, compression

1 Introduction

Visual data transmitted within the shape of advanced pictures is getting to be a major method of communication within the advanced age. Pictures are created to record or show valuable information. However, due to defects within the imaging and capturing handle, the recorded picture constantly speaks to a corrupted form of the first scene. The fixing of these defects is pivotal to numerous of the consequent picture preparing errands. A wide run of debasements such as clamor, geometrical corruptions, brightening and color flaws and blur.

The field of picture rebuilding which is now and then alluded to as picture deblurring or picture deconvolution is concerned with the reproduction or estimation of uncorrupted picture from obscured and boisterous one. Picture rebuilding is related with minimizing or indeed expelling artifacts due to obscuring and commotion. Obscuring which may be a direct shape of debasement can happen due to camera deblurring or due to movement. This venture concentrates on the Examination and Comparison of algorithms of picture reclamation calculations.

It can be watched from the comes about gotten that with no clamor data, the Wiener and Regularized channels execution in realizing the corrupted picture was destitute. Be that as it may, the Lucy- Richardson channel had a great execution, in spite of having no data approximately the commotion within the picture. With clamor data, the Wiener and Regularized channels did an awesome work at reestablishing the picture. Be that as it may, the Wiener

channel is much superior at the obscure than the Regularized channel. In spite of having no clamor data, the Lucy-Richardson channel performs or maybe well at evacuating the corruption from the PSF (obscure within the case) but not the clamor. In this manner, having a great PSF, the Wiener and Regularized channels will perform superior where the commotion data is accessible while, the Lucy-Richardson channel performs superior in obscures disposal and not especially the clamor. The quantization method is more suitable as a decomposition method for image restoration. The experimental results in the article "Image Compression by Visual Pattern Vector Quantization, (Feng Wu, Xiaoyan Sun)" fully demonstrate the advantages of the quantization technique. It can even surpass JPEG over 1.7 dB. More importantly, the visual quality of the reconstructed image in the proposed scheme in the article is very good even at very low transfer rates.

2 Conclusion

In conclusion compared methods we need to find the best method individually according to the problem. We present the results with advantages of each methods with different defects. However, Vector Quantization is one of the powerful and perspective method for reconstruction and compression of the image. But there are still many aspects to be investigated in the future, such as adaptive up-sampling, enhanced indexing method, large-scale visual pattern learning, and so on.

References

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