Enhancing Quality of Images using Fuzzy Logic and Singleton Parameters

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Abstract

There are a lot of images around carrying valuable information yet because of its poor quality, necessary information cannot be extracted. A low quality image is perceived to have low contrast and poorly defined boundaries between the edges. Most watched images speak to just a corrupted form of the first scene since genuine imaging systems and additionally imaging conditions are normally poor. The principal objective of this study is to manipulate and process an image so that it has a better presentation than the original image. When an image is processed for visual interpretation, the viewer, and the user is the ultimate judge of how well a method works. The visual evaluation of image quality is highly personal to the viewer and the user. The work concentrates on essentially the analysis of the visually enhanced images and a fuzzy approach for further enhancing these images, to make it more readable. The performance of the proposed technique was evaluated in terms of the visual quality, and the stability of the performance of the image enhancement techniques using eight image analysis parameters, to quantify the differences between the original image and the enhanced image. The experiment was carried out to study the performance of the image enhancement schemes and fuzzy logic
image at different levels of image defects. The research analyzed this method with PSNR, MSE IQI, SI, and other important metrics in addition to visual comparison. The results then show this method as very good for reducing image defects.

References

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Index Terms

Computer Science  Image Processing

Keywords

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