

Novel Algorithm for Restoration of Retina Images

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Abstract : Diabetic Retinopathy is one of the complicated diseases and it is caused by the changes in the blood vessels of the retina. Extraction of retina image through Fundus camera sometimes produced poor contrast and noises. Because of this noise, detection of blood vessels in the retina is very complicated. So preprocessing is needed, in this paper, a novel algorithm is implemented to remove the noisy pixel in the retina image. The proposed algorithm is Extended Median Filter and it is applied to the green channel of the retina because green channel vessels are brighter than the background. Proposed extended median filter is compared with the existing standard median filter by performance metrics such as PSNR, MSE and RMSE. Experimental results show that the proposed Extended Median Filter algorithm gives a better result than the existing standard median filter in terms of noise suppression and detail preservation.

Keywords : fundus retina image, diabetic retinopathy, median filter, microaneurysms, exudates

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