Abstract

This paper compares the performance of various filters on the images degraded by the fog. Denoising is vital for the image enhancement. It is difficult to remove the noise from the images while preserving the information and the quality of the image. For analysis filters like Median, Alpha Trim, Lee, Wiener, Anisotropic Diffusion and Guided filter are used. Number of performance metrics exists already in the literature to analyze the performance of denoising filters like SNR (Signal Noise Ratio), MSE (Mean Square Error), NAE (Normalized Absolute Error) and SC (Structural Content). The result demonstrates that the results of filters are not satisfactory. So, recently proposed dark channel prior method is studied and implemented. The visual results of the dark channel method are better than the filters.

References

- Kristofor B. Gibson and Truong Q. Nguyen, "Fast Single Image Fog Removal"
- Raghvendra Yadav, Manoj Alwani, "Enhancement of fog degraded images on The basis of histogram classification;", pp. 549-554
- Kaiming He, Jian Sun, and Xiaou Tang, "Guided Image Filtering;", pp. 1-13.
- Kaiming He, Jian Sun, and Xiaou Tang, "Single Image Haze Removal Using Dark

**Index Terms**

Computer Science  
Image Processing

**Keywords**

Denoising  
Median Filter  
Alpha trim filter  
Lee filter  
Wiener Filter  
Anisotropic diffusion filter  
Signal to Noise Ratio

Structural Content

Normalized Absolute Error

Mean Square Error

Dark Channel Prior Method.