Abstract

Image denoising using bilateral filter is controlled by the width of its smoothing functions namely the domain and the range components. The choice of the width of range function is image dependent and requires several experiments. This paper presents an automatic method based on power-law scaling of the inverse of local statistics for pixel wise estimation of range parameter. This leads to an adaptive range function that is narrow along the edges and wide for smooth regions. The experimental results validate the performance of the proposed method of parameter selection in denoising images corrupted by additive white Gaussian noise.

References

- D. Barash, "A Fundamental Relationship between Bilateral Filtering, Adaptive
Pixel Dependent Automatic Parameter Selection for Image Denoising with Bilateral Filter


Index Terms

Computer Science

Signal Processing
Keywords
Automatic Parameter Selection  Bilateral Filter  Denoising  Local Statistics  Pixel Adaptive