Abstract

A hybrid Super Resolution (SR) algorithm is proposed to deal with the Low Resolution (LR) images degraded by Mixed (Gaussian + Impulse) noise. The algorithm adaptively estimates and removes the impulse noise from the input LR images based on edge, geometrical & size characteristics. The fuzzy based impulse noise removal algorithm is along with adaptive sharpening filter based SR using steering kernel regression are used to obtain a HR image. The experimental results confirm the efficacy of the algorithm for different types of images at various noise densities.

References

Super Resolution Reconstruction in Mixed Noise Environment

- Tania Stathaki, "Image Fusion: Algorithms and Applications" First edition, Academic Press is an imprint of Elsevier,
- David G. Lowe, September 1999, Object recognition from local scale-invariant features, International Conference on Computer Vision, Corfu, Greece, pp. 1150-1157.
- Y. Deng, C. Kenney, M. S. Moore and B. S. Manjunath, Peer group filtering and perceptual color image quantization, vol. 4, July 1999, pp. 21-24
- Y. Shen and K. E. Barner, May-June, 2004, Fuzzy Vector Median-Based Surface Smoothing, IEEE transactions on visualization and computer graphics, vol. 10, no. 3,
- J. Astola, P. Haavisto and Y. Neuvo, April, 1990, Vector Median Filters,
Super Resolution Reconstruction in Mixed Noise Environment


Index Terms

Computer Science
Applied Sciences

Keywords
Geometric features  Steering kernel regression  SIFT based registration
Interpolation.