Abstract

A new adaptive switching-based median filtering scheme for restoration of images that are highly corrupted by salt and pepper noise is proposed. The function of the algorithm detects the corrupted pixels first since the salt and pepper noise only affect pixels value in the image. The probable value of the noise central pixel is predicted based on noise level. Initially the algorithm adopts adaptive property for expanding the filtering window pixel by pixel until 7×7 mask. But when all the elements in 7×7 window are noise pixels the algorithm define probable pixel value through noise free last processed pixel or creating a filtering window with a big dimension and search for a pixel value which is more frequent. Then Robust Estimator Algorithm is applied to the proposed filter to remove discontinuity of pixel intensity and smooth the image. The algorithm is mainly implemented focusing on the removal of high-density salt and pepper noise in images. Extensive simulation and visual quality of image shows that it can provide high quality restored images.
An Enhanced Filtering Approach for High Density Salt and Pepper Noise to Restore Image with the Aid of


Index Terms

Computer Science               Signal Processing

Keywords

Adaptive Switching Median filter  Robust Estimator  Salt and Pepper Noise
An Enhanced Filtering Approach for High Density Salt and Pepper Noise to Restore Image with the Aid of