Abstract

The removal of impulse noise in images is an important research problem in image processing. In this paper, we propose a Fuzzy filter in two steps to restore corrupted images by salt and pepper noise. In the first step of the algorithm identifies the noise using the fuzzy certainty degree with the directional weighted difference, in the second step the noise pixel can be replaced by a weighted average of uncorrupted pixels. Experimental results show that the proposed algorithm is superior to the state of the art filters. The proposed method also shows to be robust to noise levels up to 90% while maintaining the main image details.

References

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Index Terms

Computer Science  Image Processing

Keywords

Weighted average, certainty degree, fuzzy directional weighted difference, impulse noise.