Abstract

Image segmentation remains one of the major challenges in image analysis, since image analysis tasks constrained by how well previous image segmentation is accomplished. It is considered as an important basic operation for meaningful analysis and interpretation of acquired images. In most of the image processing applications, clustering algorithm is used as the segmentation method, because clustering algorithm can segment and determine certain regions of interest in a particular image. During image acquisition, images will be affected by salt-and-pepper noise and this will affect further processing result of the image. For obtaining a better segmented image from a noisy image, a new method is proposed. In this new method (clustering algorithm), noise detection stage is included to the existing clustering algorithms like k-means, fuzzy c-mean, etc. In this method, the correction value for the noise pixel is found and this value is used to replace the noise pixel value in the corrupted image. By doing like this, the effect of noise can be reduced. Then the clustering technique is applied for segmenting the image. After segmentation, the segmented image is analyzed both qualitatively and quantitatively.
References

- Weiling Cai, Songcan Chen*, Daoqiang Zhang, "Fast and Robust Fuzzy C-Means Clustering Algorithms Incorporating Local Information for Image Segmentation" Nanjing University of Aeronautics & Astronautics Nanjing 210016, P. R. China 2. R. C.

**Index Terms**

Computer Science  
Signal Processing

**Keywords**

Clustering  Image Segmentation  Salt-and-pepper Noise  Image Processing