Abstract

Edge detection is one of the most important tasks in the field of image processing. Detection of edges from noisy images is of greater importance as most images obtained are corrupted by impulse noise due to communication and transmission errors. In the proposed work a novel adaptive algorithm for finding edges of noisy images is proposed. One of the major problems with noisy images is that the noise pixels are also detected as edges, so in the proposed algorithm a threshold is used to distinguish between edge pixels and noise pixels. The value of threshold is inversely proportional to the level of details whose edges are detected and makes the algorithm adaptive. A sliding window is taken and the difference of the center pixel with all the pixels of the window whose value is not equal to zero or one is taken. But if the center pixel itself is zero or one then the difference from a noise free median is calculated. The average of the differences is checked against a threshold value. If the average value is above the threshold then it is a edge point otherwise it is noise based on this a binary image showing the
edges is obtained

References

- Feng-ying Cui, Li-jun Zou and Bei Song, "Edge Feature Extraction Based on digital Image processing techniques," Proc. IEEE Int'l conference Automation and logistics, Qingdao, China September 2008
An Adaptive Edge Detection Algorithm for Images Corrupted with Impulse Noise


Index Terms

Computer Science                     Signal Processing

Keywords

Impulse Noise  edge Detection  Adaptive