Abstract

Edge detection of images is an important task in computer vision and image processing. Edge detection of noise free images is relatively simpler, but in most practical cases the images are degraded by noise. To find the edges from noisy images is a challenging task. This paper proposes a novel edge detection algorithm for images corrupted with noise. The algorithm finds the edges by eliminating the noise from the image so that the correct edges are determined. For making the image noise free the algorithm calculates closeness parameters, based on this parameter the noisy pixel is replaced by the most appropriate value. The edges of the noise free image are determined using morphological operators erosion and dilation. The proposed algorithm uses a combination of these operators to find the edges. This algorithm uses two different types of structuring elements so that all the edges of the image are determined efficiently.

References
A Novel Algorithm for Impulse Noise Removal and Edge Detection

- Dagao Duan, Qian Mo, Yueliang Wan and Zhongming Han “A Detail Preserving Filter for Impulse Noise Removal” in Proc.ICCASM,2010,paper V2-265
- 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
- Yuqian Zhao, Weihua Gui and Zhencheng Chen “Edge Detection Based on Multi structure Elements Morphology,” Proc. IEEE Intelligent Control and Automation, June
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Index Terms

Computer Science  Security

Keywords

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