Abstract

Edge detection is one of the fundamental tool in image processing, machine vision and computer vision, which aim at identifying points in a digital image. It is an important tool for medical image segmentation and 3D reconstruction. Generally, edge has detected according to some early brought forward algorithms such as gradient-based algorithm and template-based algorithm, but they are not so good for noisy medical image edge detection. In order to overcome this problem, adaptive threshold using ACO has proposed. Ant colony optimization technique is used for computing an optimal threshold value used by adaptive threshold for edge detection. The various edge detection algorithms are compared with the proposed algorithm and their performance are evaluated using the evaluation metrics. From the experimental results, the proposed algorithm was better than the adaptive threshold method.

References

- Gholamali Rezai-Rad, Majid Aghababaie,&quot;Comparison of SUSAN and Sobel Edge Detection in MRI Images for Feature Extraction&quot;, IEEE transaction on Information and Communication Technologies, volume1, October 2006, Pages 1103 - 1107.

Index Terms

Computer Science
Pattern Recognition

Keywords

Medical image processing, Ant Colony Optimization, Edge detection, Adaptive threshold, and MRI images